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PEAT MILLS.

Whether peat can be profitably employed as fuel, in manufactories and locomotives, is a question which has been agitated for some time, and which we believe must be answered affirmatively. For ordinary domestic purposes, it is known to have been used from a very early date. Pliny mentions its use, and from time immemorial it has formed the chief fuel of Ireland. Peat fields are found in Bavaria, Holland, France, Scotland, and most parts of the temperate zones, remarkable for moisture. The peat deposits of this country are rich and extensive. Capitalists will find it profitable to work them in those localities where coal and wood are scarce. As fuel for steam engines peat will be found of great value when solidified, as its composition is allied to wood and coal, containing carbon, hydrogen, oxygen and nitrogen. It produces an intense heat with very little waste. By many it is considered equal to charcoal for smelting and puddling iron, and for this purpose it has been used in Europe, for some time, though not extensively. A brilliant gas may also be made from it. In the ordinary form, as taken from the bog, peat is deficient in density. To employ it with the greatest profit it is necessary to solidify it by breaking up and mixing all the fibre, removing the sap and air cells, and then drying the entire mass. This until lately has been performed by manual labor. We illustrate a machine by which this process is worked, treating the peat so as to make it suitable for the drying ground. In Fig. 1, a perspective view of this machine. A is the cylinder into which the peat in its crude state is fed at the top, which is made of a hopper form. Fig. 2 is a section in which the grinding cylinders are shown. The cylinder is made stationary, and is provided upon its inside with a number of blades which project inwardly, and working between these blades are the blades shown in Fig. 3, attached to a vertical shaft and rotated by means of the bevel-gears, c, c', through the driving shaft, C. The blades, b, present a convex front edge to their lines of motion and are beveled upwards from their under surfaces, forming a moderately sharp edge in front. These blades are so dispersed on the shaft as to form a consecutive series in a spiral direction around the shaft, and serve, in connection with the blades in the hopper, to cut and mix the peat and at the same time press it downward through the cylinder, A, into a lower cylinder, D, within which the blades, d, rotate. These are similar to the upper ones, but present a more convex front surface to their line of travel and are of a more convolute shape. The depth of the blades is the same as the cylinder, D, and their office is to press the peat outwardly by their rotation and force it through the oblique slots, e, e, which are arranged around the cylinder, D; this cylinder is made to revolve in a reverse direction to the blades, D, and the obliquity of the slots tends towards the rear, relatively to the course of the cylinder's motion. The cylinder, D, is one of a series of concentric cylinders, attached to the table, E, and revolving with it, but traveling in a reverse direction to the shaft, B, by means of the bevel-gear, f. Two other cylinders, F and G, revolve within the cylinder, D, and are formed with inclined slots, g, g, similar to it. The cylinders, D and F, are sufficiently close to each other to receive snugly within them a stationary cylinder, H, formed with slots, h, h, but sloping in a reverse direction from those of the cylinders, D and F. By this arrangement the peat is forced through the three interior cylinders and is thoroughly ground and mixed, and by the obliquity of the slots is delivered to the outer cylinder. A director, J, is arranged across the circular channel which separates the two outer cylinders and serves to cut the mass of peat in the channel, causing it to be forced into the tube I. In this machine the peat can be received into the hopper direct from the carts. For further particulars address Messrs. W. S. Fox & Co., 470 Water street, N. Y. City.

Fig. 1

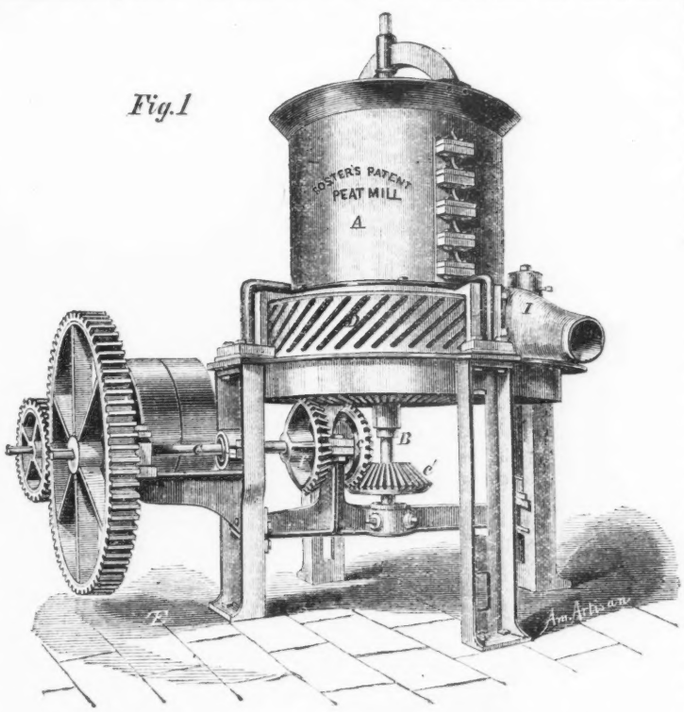


Fig. 2

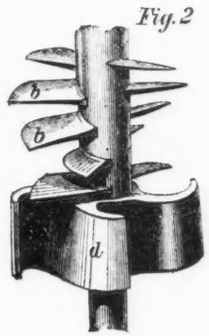
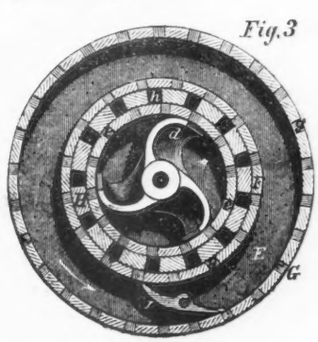


Fig. 3



FOSTER'S PATENT PEAT MACHINE.

Anthracite Coal.

It is a singular fact that Pennsylvania coal, now so extensively used as fuel, was discovered no longer ago than 1811, and that the man who discovered it lost a fortune and his reason in endeavoring to make people believe it would burn. In November, 1811 Colonel George Schumaker, being engaged in cutting timber on Sharp Mountain, threw some black stones upon his camp fire. In the morning he found them all aglow. Shortly after, loading six wagons with this coal, he journeyed to Philadelphia, where he expected to find a ready market, but being unable to show people how to burn it, he was looked upon as an impostor, and threatened with arrest! He left his coal upon the outskirts of the city. A blacksmith was venturesome enough to try some of it, and found it would burn. Yet in trying to make it burn the Colonel lost eight years' labor and a fortune; failed, became insane on that point, and died in the lunatic asylum, Philadelphia, in 1840, after spenning twenty-one years of his life an insane man on account of that great mineral.—*Ex!*

The Money in the Mines.

How few of us have any adequate notion of the rapidity with which money is taken out from a good mine. We have the curiosity to make the following calculations, taking the Gould & Curry mine for a basis. The figures are from the Annual Report of Professor Stretch, State Geologist for Nevada. In six years the mine has yielded, in round numbers, 220,000 tons of ore, averaging $59 per ton, or a total of $13,627,000. This is about $2,270 a day; $259 per hour, $3 30 per minute, counting every day in the year at twenty-four hours to the

day. In silver it would weigh nearly 568 tons, and would require 7,270 men to pack it, each carrying 150 pounds. It would take a train of two-horse teams, in close order, over ten miles long to haul it. In short, the mine has yielded more money in six years than we have accumulated in forty, and yet it was all taken from a piece of ground 1,300 feet in length by thirty in width, a little over an acre. Wonder if they have any acres in New York City worth as much.—*Amador* (Cal.) *Ledger*.

For the Journal of Mining.

Royal Prussian Mining Academy at Clausthal.

The Royal Mining Academy at Clausthal was founded in 1811 as a school for theoretical and practical instruction in mining, engineering and smelting. Although more especially designed for preparation of its scholars for the government service in the Harz, yet its pupils are largely composed of foreigners desirous of fitting themselves for these professions. The Academy is under the direction of the Bureau of Mines and Forestry for the Harz, and the following faculty:

DIRECTOR.

Frederick Adolph Roemer—Councilor of Mines, Knight of the Order of Mauritus and Lazarus, and Ernst August.

FACULTY.

Roemer—Geognosy, Mineralogy, Palæontology and Mining Jurisprudence.

Kerl—Mettallurgy, Assaying and Blow-pipe Analysis.

Streng—General and Analytical Chemistry and Chemical Technology.

Von Sroddeck—Exploitation of Mines and Practical Mineralogy.

Prediger—Descriptive Geometry, Higher Mathematics and Geodesy.

Borchers—Mining Surveying.

Zimmermann—Business Routine.

Schoof—Mathematics.

Horman—Physics, Mechanics, Theory and Construction of Machines.

Lahmeyer—Mining Accounts.

Kutcher—Freehand Drawing.

The course is divided into the practical or introductory course of twenty-four weeks, and the regular or theoretical of four years. The practical course is intended to supply those who are about to enter the Academy with the necessary practical knowledge of the operations of mining and smelting, to enable them to attend the lectures of the theoretical course with advantage. It begins on the first Monday after Easter and continues twenty-four weeks; of which eight weeks are devoted to dressing and milling, eight to the mines and eight to smelting.

The theoretical course is divided as follows:

First year—Freehand drawing, machine drawing, lower mathematics, general physics and general Chemistry.

Second year—Descriptive geometry, higher mathematics, mechanics, stoichiometry, qualitative analysis, mineralogy, exploitations of mines.

Third year—Practical mineralogy I, theory of machines, mathematical review, geognosy and palæontology, general metallurgy, chemical technology I., exploitation of mines II., quantitative analysis.

Fourth year—Chemical Technology II., mass analysis, iron smelting, assaying, mine surveying, topography, civil constructions, machine constructions, geodesy II., mining jurisprudence, mining accounts, quantitative analysis.

The government pupils are obliged to take both courses in the order laid down, and they are examined at the end of each scholastic year. The other members of the Academy are at liberty to attend such lectures as they may desire; and their participation in the examinations is entirely optional with themselves.

Diplomas are given to those students (other than the government pupils) who shall have written a satisfactory thesis upon some subject selected by the faculty, and have passed a satisfactory examination in the subjects laid down in the course, before a board appointed by the faculty, composed of five members of the same.

The fee for the practical course is eighteen Prussian thalers, for the general course thirty-six thalers per annum, laboratory fees from six to eight thalers. There are no extra charges.

Alexander Addison, C. E.
Clausthal am Harz, Prussia, April 4, 1867.

Swedish Iron.

There are 500 iron mines in Sweden, which yielded in 1864 half a million tons of ore. All the ore is smelted with wood charcoal, and all refining processes are carried on with the same fuel, and with remarkable care and attention. With but the smallest traces of sulphur, and scarce a trace of the worst of all impurities, phosphorus, it is not strange that such ores, such fuel and such pains, should produce a famous iron. Very little bar iron is manufactured, however, the annual product never having exceeded 200 tons, to 300,000 tons of pig. About 5,000 tons of plates are made for ship building. The Bessemer process has been introduced about five years, and produced in 1864 some 3,200 tons. The amount of cast steel produced at the same time was 4,500 tons.

Original Papers.

THE MICROSCOPE:

History of its Invention, Its Geological Teachings, and Its Uses, for the Miner, Mineralogist, and Chemist.

Written for the Journal of Mining, by P. H Van Der Weyde, M. D., late Professer in the Cooper Union, New York Medical College, and Girard College, Philadelphia.

Continued from Page 183.

In relation to the history of the microscope, I ought to mention the oldest magnifying lens existing; it was found in the ruins of Nineveh, was made from rock crystal, and was exhibited in 1852, by Brewster, to the British Association at Belfast.

That the refractive power of glass was known long ago, and studied in Egypt four hundred years before Christ, is proved by Ptolemy in his Optics, where he gives a table of the deviation luminous rays experience when passing through glass under different angles of incidence. It was only two thousand years later that the French philosopher Descartes found the law that the amount of this refraction is proportional to the sine of the angle of incidence, and from that time date all great discoveries in optics. Mathematics being now applied to every branch of this science, optics is, at present, a department of natural investigation farther advanced than any other existing.

I find that spectacles were already in use in the year 1200, and that little glass balls were sold at the grocery stores in Athens, five hundred years before Christ, and were called "burning spheres,"*

Dr. Hooke speaks, in his *Micrographia Illustrata*, published in 1636, of the use of such very small glass spheres, for strongly magnifying purposes. It was, however, only successfully put in practice by Hartsoeker, in Holland, 1672, and their use was afterwards extensively introduced in England and France by Butterfield. Then came continuous and manifold changes and modifications in the mechanical arrangements for holding, moving, and focusing objects, and in the exterior form of the microscope, which it would be useless to describe, but of which the lover of the history of the natural sciences may occasionally see the proofs in some old collection of apparatus at colleges, or at long established dealers in optical instruments.

THE POOR MAN'S MICROSCOPE.

I must, however, mention here, the water microscope invented by Stephen Gray (Philos. Transactions, 1696), as, in some cases, the knowledge of it may be useful, when no apparatus of any kind is on hand. It consists, simply, in a very small drop or globule of water, suspended at the end of a wire or pin; it will magnify any small object, while in that part of the drop opposite to the eye, to a very great extent, which will be in an inverse ratio to the size of the drop.

This arrangement has later been improved, by placing a small drop of water on a piece of heavy tinfoil, or, better, thin sheet lead, as is used for lining tea-chests, or even, for want of better, a piece of card-board. A hole is made with a pin in the sheet lead, which is kept in a horizontal position, and the water drop is placed in the hole; when the drop is small enough it will not pass through the hole, but stick in it by capillary attraction, and, by its weight, be so flattened that it will act like a very small lens, and objects to be magnified may be placed at a small distance below, say one-twentieth of an inch. I found this contrivance occasionally useful, and it surely has the merit of being the cheapest of all microscopes, its cost being a very small fraction of one cent.

THE SOLAR MICROSCOPE AND MEGASCOPE.

The theory of the solar microscope was first developed in Germany by Prof. Balthasaurs in Erlange, in 1710; but its practical execution is due to Dr. Lieberkuhn, in Berlin, who made the first successful apparatus in 1740. It is founded on the same principle as the *camera obscura*, only in place of causing the lens, or lenses, to form inside of the apparatus a small image of large exterior objects, as is the case with the *camera obscura*; on the contrary, in the solar microscope, the lens or lenses form outside of the apparatus a large image of small objects placed inside the apparatus. The objects must be transparent, and thoroughly illuminated by sunlight which passes through them.

When the objects are opaque, and illuminated in front by reflecting mirrors, the apparatus has been called a megascope.

THE HYDRO-OXYGEN AND ELECTRIC MICROSCOPE.

This apparatus is perfectly identical with the solar microscope, only for the solar rays, which we have not always at our command, the so-called Drummond, lime, hydro-oxygen, or electric light, is substituted.

It is inferior to the solar microscope, in the same rate as our best artificial lights are all inferior to the light emitted by the spheres which illuminate the universe; and the high opinion of many about this apparatus proceeds only from being unacquainted with that which a good solar microscope may accomplish.

COMPARATIVE VALUE OF THE SOLAR AND OTHER MICROSCOPES.

But, after all, notwithstanding the solar and similar microscopes are very useful for class demonstrations and exhibitions, and have done much to popularize this branch of investigation, by magnifying the smaller objects to the most enormous sizes (for instance the head of a louse to twenty feet diameter, etc.), they have not contributed to increase the stock of our knowledge: for the real investigation of the details of small objects, we must examine the objects themselves, and not their images or shadows, as is the case with the solar and similar microscopes.

PHOTOGRAPHIC MICROSCOPE.

Since the invention of photography, several persons have occupied themselves with producing enlarged photographs of small objects, using for this purpose a modification of the solar microscope. Some have been eminently successful, and it has been found by experience that, for enlarging very small objects, by means of the hydro-oxygen, or electric microscope, it is much less satisfactory to show an audience the object itself magnified, than to have first an enlarged photograph on glass, and then to place this in the magic lantern, dissolving view, or so-called stereopticon.

The cause is, that it is difficult to concentrate light enough on a very small object, to diffuse this on a large screen to a very magnified image; but when first a photograph of three or four inches in diameter is produced, enough light may be concentrated on this, to enlarge it to a diameter of say twenty feet.

MICROSCOPE FOR OPAQUE OBJECTS.

Most objects to be examined by the miner and mineralogist are opaque, and it is important, therefore, to review the means employed to illuminate them; the majority of microscopes being only adapted to transparent substances.

When the lens or microscope employed is of inferior power, common, clear day, or artificial light, is sufficient; but when a very strongly magnifying lens or microscope is used, it is insufficient; to which must be added the incidental difficulty that the objects are then placed so near the lens that the light can scarcely reach them, the shadow of the lens interfering.

The so-called glass condenser is then employed, being a large convex lens placed at the side of the object, at such a distance that this is in the focus

* See Aristophanes.

of the condenser, so that the light falling through this condenser is concentrated on the object.

This condenser may be modified, and be partially a reflector, prismatic or otherwise; it is, however, founded on the same principle.

Lieberkuhn made, in 1740, a highly polished concave reflector of silver, with a hole in the centre, in which hole he placed the small lens—the focus of the mirror coinciding nearly with the focus of the lens. Plenty of light was reflected on the object placed at this point. As the light reaches the object equally from all sides, it shows no shadows, and it is difficult to make out its real form; however, for the detection of small particles of metals, or other substances in ores, it is of great service.

I made an eye piece, into which the light is admitted at one side, through a hole, and reflected downward through magnifying lens or lenses themselves, which thus serve the double purpose of concentrating the light on the object, and of bringing the magnified object to the eye of the observer.

As those last arrangements are, as above remarked, perhaps, those modifications of the microscope most useful to the miner and mineralogist, I will illustrate them with a few figures in the next number.

TO BE CONTINUED.

[WRITTEN FOR THE JOURNAL OF MINING.]

METALLIFEROUS VEINS AND MINERAL LIFE.

By A. BLATCHLY, M. E.

(No. IV. Continued from Page 183.)

In veins below the level of the sea it is impossible for any very great currents of water to exist. Figures fail when we attempt to calculate the amount of water that must pass through a vein fissure to form a vein of quartz of the largest size. Especially when we consider how small an amount of silica is soluble in water, and the extremely slight difference between water that is saturated and when it is supersaturated so that a deposition is possible. And it is difficult to imagine why water should become saturated with some substances and not with others which are not only more abundant, but also more soluble; but much more difficult to conceive how water can deposit gold or platinum, which are not soluble in it. In mountain ranges of limestone, containing but a very small amount of silex, veins are found so situated that rain falling on the mountains would traverse but a very small portion of the limestone before depositing an amount of silex greater than the body of limestone over which it had passed. Instances of this kind are common in limestone mining districts, and it is held that these veins were found first and upheaved afterwards; but in many cases the enclosing strata do not appear to have been but very slightly disturbed, not having been moved more than five degrees from their original horizontal position. Now, it is almost impossible for water, in passing over or through a small body of limestone, to collect sufficient silex to form some of those vast masses of quartz of several hundred feet in thickness and many miles in length, as are found in Hot Creek, Reveille and Danville mining districts, in the southeastern portions of the State of Nevada. If we look at actual depositions from the thermal springs, and from waters impregnated with lime, we will find that those from springs obey the same laws that govern volcanic deposits, and that mounds and beds of silicious or calcareous tufa are deposited in the same form as volcanic tufa, and that calcareous deposits from water in caves and fissures in the earth never assume the form of metalliferous veins; and if we analyze the ultimate force which causes these depositions, we shall find it to be purely gravitation, the same force that controls other fluids and compels them to seek the lowest level, carrying their soluble or insoluble ingredients with them; so that this theory, although explaining many of the phenomena of vein formations, meets with insuperable obstacles.

It will give us a better conception of the manner of vein formations if we examine the conditions under which they are found, and their appearance at different stages of their growth. This can be best accomplished by first observing the formation of the sedimentary rocks, as slate and limestone, which enclose metalliferous veins.

Rocks of this class are in process of formation at the present time, and no one will deny that all rocks of that class were formed in an analogous manner and by similar means. It is generally conceded that these rocks are continually forming at the bottom of large bodies of water; and, although the amount of matter deposited is comparatively small from given volumes of water in a limited time, still, by reason of the vast volumes of water slowly, though constantly, changing in the lapse of ages, the material for the formation of these rocks is furnished. These substances, when first deposited, are soft and plastic, and animal and vegetable remains become imbedded in them, and in process of time all harden and become turned to stone. Limestone, at first soft, granular and homogeneous in their texture, gradually begin to show symptoms of a change by crystallization. At first only the most indistinct traces of crystalline action can be observed, but they became gradually more distinct and general, until the whole mass becomes crystalline. All traces of fossils that once existed are entirely obliterated, and the structure of the rock is completely changed. Instead of being one body, or composed at most of but few, it becomes divided into a great number of separate bodies, each having sharply defined outlines, with peculiar and definite forms, with clearly marked lines of separation.

TO BE CONTINUED.

Translated for the AMERICAN JOURNAL OF MINING, by ADELBERG AND RAYMOND, Mining Engineers.

A Comprehensive View of the History and Present Standpoint of Geology:

Being the Introduction to Prof. BERNHARD COTTA'S new work, "Die Geologie der Gegenwart."

No. VII.—Continued from Page 184.

The present limited extent of all contemporaneous deposits, as well as of all living animal and vegetable species, might, of itself, have led to this supposition, had not the anterior world been considered as totally different from the present world—as an era in which, perhaps, other natural laws prevailed. This was, indeed, to be candid, a curious prejudice. The geological processes and formations still going on at the present time were hardly believed worthy of consideration, until the appearance of Lyell and v. Hoff, the first of whom has endeavored to show that these processes are essentially sufficient to explain the interior structure of the globe, if we only be not too niggard with time—for which there is, indeed, no occasion, since eternity lies behind as well as before us. His careful examination of the tertiary deposits proved clearly, that, in those strata, species yet living occur together with those now extinct, and that the ratio of the living to the extinct increases as we approach from the lower to the upper tertiary formations, and, finally, to the most recent deposits; so that, properly speaking, no fixed boundary can be drawn between the primeval and the coeval world. On this proportion between living and extinct species is based the division, now very generally adopted, into pliocene, miocene, and eocene strata, which has nothing at all to do with the peculiar mineralogical or petrographical constitution of local formations, but merely expresses an approximate subdivision of geological age. Yet, under the influence of former opinions, Lyell attempted to establish this classification by actual numerical proportion, which he eliminated from particular local deposits; but it is self-evident that such fixed numerical proportions can have no universal validity. A similar law of gradual change of species certainly obtains for all older periods also; the lines of demarcation between their strata are not general, but only local, as is the case in the great tertiary period. The chief difference consists merely in this, that only fossils of species now extinct are found in the ante-tertiary strata.

We may most appropiately compare the changes of species in past periods with the present changes of individuals of the same species. It is immaterial which species be chosen; but the phenomenon is most apparent in man, because every individual bears a separate name. A year ago, the great majority of men now living were already alive; the difference in population is hardly noticeable. Two years back, it is already a little larger; fifty years ago the human population was composed mainly of other individuals than at present; a hundred years ago there existed only a very small proportion of the men of our days, and, two hundred years ago, certainly, not a single one of our cotemporaries was living; and so it will be in future, only with this difference, that then the whole number of men will probably be greater than now. Thus flow the generations imperceptibly into each other, and it is impossible to fix precise limits for them, since daily some men are born and others die. It can only be stated, that the total change of individuals in the human family completes itself in somewhat more than one hundred years. This period varies greatly for the individuals of the several species of animals and plants; for many animals it is only one year for many plants it is more than a thousand years. So it seems to have been with the succession of species, only the periods of their existence were far more extended. Locally the process of extinction, or, rather, transformation of species, may have been accelerated by special natural events, as that of individuals by epidemic diseases; but in general it preserved a uniform progression. During these changes we notice a constant progress of organic development from the simpler to the more complex, from the lower to the higher, from strange to accustomed forms, the cause of which is to be found in the constant summation of external influences.

This whole course of the history of the earth's structure resembles somewhat the course of history, so-called, *par excellence*, as relating to man. Here, too, there are no distinct and universal demarcations; progress is locally unequal; even the most important discoveries and intellectual or political events compass at first only a narrow field, from which they extend slowly over neighboring ones, now, it is true, with greater rapidity than formerly. Before their influences reach around the globe centuries or millenniums may be required, as is most strikingly illustrated in the propagation of Christianity. The epochs into which human history has been divided, like those of the geologists, are more or less arbitrarily based upon local events; eminent men, the standard-bearers of new ideas, are essentially themselves results, not creators of their time, just as leading fossils represent only the local predominance of individual species, the increase of which was conditioned by circumstances.

Even the boundary between the time which is usually called historic and that which we refer to the former world, has become more and more indistinct, the closer it was investigated. If historic time is that which is covered by historic records, then it is very different for different countries, and everywhere its beginnings are hidden in the darkness of tradition; but if it commenced when man first appeared on the globe, such an historic time—as the most recent investigations have shown—would, at all events, antedate by many millenniums the records, and even the vague traditions of all

countries. There is no longer any doubt that Europe, at the time of the now extinct elephant and rhinoceros, the lion and the cavern-bear, was already inhabited by man, and it seems probable that man existed before the ocean had burst through the channel between France and England. If this were proved, then the question would no longer be confined to millenniums, but would concern much greater periods, to express which in numbers would be too hazardous. Shortly after these important discoveries concerning the age of the human family, animal life was traced back an immeasurable era by the discovery of the remains of Forminiferæ far below the Silurian and Cambrian deposits among the crystalline schists, between which, till then, strata of graphite had been known to exist, originating, probably (to judge by their substance), from vegetable remains. In regard to the origin and extinction of species, Charles Darwin's investigations have but recently diffused new light. Before him it was only attempted to cut this Gordian knot, never to untie it. But no theory corresponds so fully with geological facts as that of the most slowly advancing development of species, genera, orders and classes, through constant transmutations, from the simplest possible beginning. It is true, the incomprehensibility of the first beginning is, even by this theory, not overcome.

The relation of astronomy, physics and chemistry has grown more and more intimate. Not only are the forms and orbits of the heavenly bodies analogous to those of our planet; even their substance is not altogether removed beyond the limits of our investigation. This has been made possible by the spectral analysis, and the examination of tangible so-called meteorites. The author expresses his regret at not receiving the excellent essay of Daubree, of the 29th of January, 1866, before the tenth part of this work was printed. Calculable changes, which periodically take place in our solar system, justify, if ever so faintly, the expectation that they may yet serve as a measure of time for geological events, as they already explain, in connection with the changes in the surface features of our globe, extraordinary changes of climate. In the influence, finally, which the progress of all knowledge of nature exerts on philosophy and poetry, geology has its due share, and receives in return from these sources a new charm - a critical spirit.

In this short review of the progress of geology we have not been able to mention the numberless details, which have been successively elucidated and established, much less could we have named all the individual laborers who have achieved important results. More circumstantially and with some unavoidable repetitions the present status of geology is described in the following chapters:—It is not to be denied that geology has made extraordinary progress since Werner's time; but the same is true of all other natural sciences, which have mutually promoted one another. Therefore, this period has been one of unusually frequent and important technical inventions, based upon the discoveries, or rather the general progress in natural science. The question arises: Will this development of new forces and auxiliaries to the welfare of the human family continue in future? The development of natural science belongs altogether to modern times. It is the characteristic of our century; even the definition of a naturalist in our present sense is hardly one hundred years old. But every science enters, after a rapid initial growth, upon a stage in which its object seems to be to a certain degree arranged and exhausted, in which general and revolutionizing discoveries become rarer, and in which the progress is mainly confined to the more accurate study of details. Geography approached this stage with the discovery of Australia. It seems almost as if mineralogy and geology had attained the same standpoint. The rise of geology as a science was early followed by its practical application in life, or rather, both these departments advanced together, mutually assisting each other. The industry of mining especially has promoted the progress of geology, whilst expecting and often receiving wise counsel in return. Thus it came about, that geology was cultivated for a time almost exclusively by the mining profession, and Freiberg can justly boast that the first connected course of lectures on geology was delivered within her walls. But the influence of this science grew more and more. It serves now not only to discover salt, coal and valuable ores, and to follow their subterranean deposits, but it connects itself more and more with the general interests of mankind, and the author believes that he has shown in his book on the influence of the soil on life (which has for its special object "Germany's soil") that the geological structure of countries has a certain relation to the development of life on their surface, and that even man—the last and the highest member in the long series of organic life—is yet to some extent dependant upon the interior structure of the country he inhabits.

(CONCLUDED.)

Mining Summary.

GOLD AND SILVER.

Nevada.

The Comstock.—The San Francisco *Mercantile Gazette*, May 9th, says: The mining share market has been characterized by a marked degree of animation during the past ten days, and great firmness, at an advance, prevails in most shares at the close. Hale & Norcross continues out of the market. We are informed that this mine is looking better as the different breasts are being opened. Air is now forced into the south breasts on the 780-foot level, and they are now raising up to connect with the 700-foot level for the purpose of obtaining ventilation. They are also running a drift on the 700-foot level, directed to this point, to connect with the "raise" below..... Savage has advanced rapidly over our previous quotations, opening at $3,050, improving to $3,060, then selling at $3,030, rising to $3,280, and closing at $3,100. During the week ending April 27th, 1,806 tons of ore were taken from the mine, showing an assay value of $80,907, equal to $44 79 per ton. The yield of the previous week gave an assay value of $32 32 per ton. The upper works produced 55 tons, sixth station 264 tons, seventh station 677 tons, and Curtis' shaft 810 tons. For several weeks past ore has been taken from the seventh station breasts through the Curtis shaft, showing that the above amount did not entirely come from the south mine. Since our last reference suitable mine timber has been obtained, and work has been resumed in the various breasts. The Curtis shaft is now over sixty feet in depth from the third or new station, and it is said to be in very favorable ground for sinking. This company have declared a dividend of $150 per foot out of the earnings of last month, besides carrying forward a large surplus. In the United States District Court, at Carson, Nevada, on the 2d inst., the case of Thornburgh vs. The Savage Company, after a two days' trial, was decided by the jury in favor of the defendants..... Crown Point has exhibited great firmness under a sharp advance, rapidly improving from $1,535 to $1,700, receding to $1,645, jumping to $2,000, and closing at $1,640. Some 626 tons of ore were extracted from the mine during the week ending April 26th—42 tons of which came from the new development in the 500-foot level. We learn that slow progress is being made in opening north and south on the east vein, owing to the hardness of the rock: however, the mine is said to look very favorable at this point..... Yellow Jacket has been in the market to a considerable extent, opening at $1.600, then realizing $1,520 to $1,750, and closing at $1,640. Information has been received by telegram from the Gold Hill office of this company that they had $205,000 in bank on the 1st inst. They have since declared a dividend of $50 per share, payable on and after the 10th inst.... Chollar-Potosi has been exceedingly active since our last reference, at enhanced figures, jumping from $590 to $662, and closing at $600. The Blue Wing station is said to be looking much better in the raise, and breasting is being continued to the north in fine ore. The second winze in this station is down fifty feet, and is also said to be in good ore. Another winze is being sunk from this station to the lower Santa Fe, which has attained a depth of about thirty feet, and is reported to be in good ore. The body of ore in the north end of the first station, from the new shaft, is said to have increased in size, but as yet shows no improvement in quality. The shipments of ore to custom mills during the week ending April 27th have been as follows: From the Potosi mine, 2,999 tons; new shaft, 468 tons; total, 3,467 tons; previous week, 2,400 tons. This company at present gives employment to 273 men at the mine, and requires fourteen mills for the reduction of its ores..... Gould & Curry advanced from $535 to $590, receded to $535 @520, improved to $590, and closed at $570. We learn that the bottom of the Bonner shaft is in better ground, and that work at that point is progressing more rapidly. The south drift from the fifth station is still in hard ground. The northeast drift on the fourth station has been commenced, and they continue to work to the east on the sixth station. The bullion received at the San Francisco office in the month of April amounted to $63.130 19..... Ophir opened at $460, declined to $400, rallied to $475, receded to $420, and closed at $422 50. The tenth station drift south is in 130 feet, and the north drift, on the same level, is in thirty feet. The first cross-cut is now being run through the ledge..... Alpha sold within a range of $450@490..... Belcher has been in active demand under a very marked advance, improving from $405 to $440, then selling at $430@455, and closing at $405..... Imperial opened at $279, receded to $258, and closed at $255. The bullion received at the office in this city up to the 1st inst., amounted to upwards of $96,000. The Imperial-Empire shaft is timbered to the depth of 872 feet. This company have declared a dividend of $15 per share for April..... Confidence sold to a large extent, opening at $70, receding to $58, then advancing to $96, and closing at $70..... Gold Hill Quartz Mining company sold at $180@165, and Kentuck at $200 per share ..... Bullion changed hands more freely than for some time past, opening at $82 50, falling to $40@67 50, and at the close realizing $55..... Overman declined from $19 to $13 and closed at $18. ..... Sierra Nevada opened at $19, then sold at $11 @15, and at the close sold at $15. At the latest accounts from this mine the water in the shaft had been reduced over 500 feet, and they then commenced to erect the plunger pump to drain the levels. It is expected that the water will all be drained out before the first of June, and thenceforward the work will progress on the ledge struck last fall..... Exchequer advanced from $12 to $18, receded to $9, then sold at $11, and closed at $10. Daney sold at $11. Golden Rule (Cal.) sold at $16, seller 30, per share..... The *Enterprise* May 11th says: The following is a statement of the amount of bullion shipped or received for assay during the past week: From the office of Wells, Fargo & Co., in this city, there were shipped 10,175 pounds of assayed bullion, valued at $309,298 50; from their office in Gold Hill, 3,039 pounds valued at $84,075 17. The amount of crude bullion received for melting and assay is as follows: E. Ruhling & Co., of this city, 22.300 ounces; Geo. W. Dorwin, of this city, 2,116 ounces, Leopold Kuh, of this city 2,106 ounces; Theall & Co., of this city, 9.557 ounces; Van Wyck & Co., Gold Hill, 40,642 ounces; Edwards & Wiegand, of Gold Hill, 14.340 ounces..... Concerning the Gold Hill Mill and Mining company, the same paper says: This company own 12 feet 14 inches of mineral ground in Gold Hill proper, between the Imperial and Confidence—the ground formerly known as the Rice claim. Besides this ground they have within a short distance of their claim a fine mill containing fourteen stamps, five six-foot pans and the necessary settlers and other apparatus. Although it is a small claim, and little has heretofore been said about it, there are few claims, if any, on the Comstock lead that pay better. The claim is divided into 500 shares, and the last dividend declared was $10 per share, or at the rate of $375 per foot. Within about ten days another dividend of the same amount will be declared, and we assure stockholders that the dividends of the company will not fall below that figure for the next six months, which is as far ahead as we can see, and as far as can be seen by anybody at the present time. The bulls and bears may toss up and pull down at the stock, thereby temporarily affecting its price, but what we have said of the mine can be depended upon for six months, for the ore is now in sight to make good our assertions in this particular matter..... Almarin B. Pane, writing from San Francisco under date of April 27, to a gentleman in this city, states: I have just returned from a trip to Virginia, Nevada, and found mining generally prosperous, all things considered, and this, all things considered, means a good deal more than I care to express. The Comstock holds out in its bullion products well; in some points, however, it is barren, and in others rich, and at times changing in prospects and value. The Sutro tunnel project has been taken hold of by many of the Comstock companies, and private individuals in some instances, and I doubt not will be a success. The fact is, I believe, the tunnel will make as much money out of mines east of the Comstock as it will after it reaches it. It will not take a very large expense to demonstrate this fact. Outside districts in Nevada and Californir is attracting a good deal of attention, and from two facts: lead can be purchased at a far less figure, and at the same time they carry more value per ton. I am now opening in outside district, and find it more safe and profitable. Sitner Bend, in Nevada, and

Kearsarge district in California, are at present having the lead; ore from both of these places is very rich.

Hot Creek.—The Silver Bend *Reporter*, May 11, says: A gentleman who is engaged in mining enterprises at Hot Creek, furnishes us with the following particulars regarding this locality: Work is now progressing upon the Indian Jim, Gazelle, Keystone, Alta and Clipper ledges. The shaft upon the Indian Jim is still continued and there has been considerable ore taken from it that is estimated will work $800 a ton. Upon the Keystone and the Gazelle, owned by one company, there are fourteen men employed. A tunnel has been run which, in the distance of forty feet, cuts the former lode at a considerable depth, striking a stratum of ore about three feet thick—about eighteen inches of which is of a high grade. The Gazelle has been worked by a cut now eighty feet into the hill, a prominent and well defined vein disclosed of about six feet in width, and the ore is of remarkable richness. Six tons have just been shipped to Austin for reduction, and there are eighty tons more lying upon the dumps, of an estimated average of $200 per ton. The Alta is a large, fine looking ledge upon which the owners have been at work now about ten days, and promises well. The Clipper ledge has a shaft sunk upon it to the depth of seventy-eight feet. At the surface, the lode is about one and a half feet thick, but it gradually increases in width, and at the bottom of the shaft is three and a half feet. The ore is not of a high grade for that locality, being estimated to work from $60 to $100 a ton, though at the bottom of the shaft ore is procured assaying much greater. The Chieftain and Niagara lodes have been worked to a slight extent, and promising well. Preparations are now making to commence extensive operations upon them. The mill at Hot Creek is still idle, and the miners there assert that it has been the bane of the district.

Reese River.—Major Sherman, general agent of the New York and Austin Mining Company is sinking another shaft called the "Barns," on Lander Hill. The new shaft is situated 1,426 feet west of the Sherman shaft—the original of a series of similar enterprises by the company—and is 155 feet less in altitude, the Sherman shaft being 1,025 feet above the level of Clifton and the Burns shaft 870 feet above the same point.... The mines of this district, says the *Reveille*, May 3, are yielding mineral of a very high grade. J. W. Varney the superintendent of the Empire mill, at Yankee Blade, has reduced within the past few days several lots of rich ore, among the more noticeable of which we will mention the following: five tons of chloride ore from the Fuller mine produced a net yield of $3,219 80; the assay of the pulp exceeded $800 per ton. Nine tons of ore from the North River were worked, the pulp of which assayed five tons of chloride ore, $479 67; four tons of sulphuret at the rate of $224 per ton. The Buel North Star sent three tons to the mill, the pulp of which assayed at the rate of $311 50 per ton. One ton of chloride ore from the Monroe mine in Yankee Blade yielded by assay of its pulp $256 07 of silver per ton. Mr. Varney informs us that great activity prevails among the owners of mines in Yankee Blade, whose property has been lying idle for a couple of years, and many of them will work from $70 to $120 per ton. .....Mr. John H. Boalt, of the firm of Boalt and Stetefeldt, of this city, arrived in town last night from the eastward. During Mr. Boalt's severe trip from Omaha the roads were in their worst condition from deep snow, swollen streams and mud. He was nineteen days from Denver to Salt Lake City. Mr. Boalt has been absent from Austin nearly a year, and he has returned now as General Agent of the McDonald Company in the Twin River district. The McDonald is the first southern extension of the Murphy mine. .....The owners of the North River mine are engaged in preparations for better and more systematic work upon their property, which is yielding splendid ore. They propose to sink a perpendicular shaft to cut the vein at the depth of 1000 feet on the line of its inclination.

Arabia.—The *Register* of May 4th, says that the Montezuma mine yielded during the month of April over 300 tons of ore, all of which has been reduced at the smelting works of the company at Oreana. The ledge shows a solid body of ore from wall to wall, 18 feet in width, and not a pound of waste rock. The company has only one set of furnaces in operation, which are reducing a full average of twelve tons a day. The smelting furnaces produced during the month of April over 200 tons of metal, in value over $35,000.

Silver Point.—This district, says the *Reporter*, is again beginning to attract some attention from prospectors. It was located about a year ago. Several locations have lately been made which give very flattering evidence of rich and extensive mines. They are about ten miles south of west from Belmont, probably on the same range known as Spanish Belt.

Montor.—The Gold Hill *News* has seen a silver bar taken from 7,000 pounds of ore from the Tarshish mine. The bar is marked, "Tarshish mine; 839 ounces; gold, 0.16 fine; silver, 853 fine; value, gold, $277 14; silver, $926 18; total value, $1,203 82. Thus it will be seen that the ore gave a yield of $343 per ton.

Central Nevada.—The *Reveille*, May 7, says: Following is the return of the mines in this county which produced bullion during the quarter ending the 31st of of this year, as compiled from the books of the County Assessor. Where the amount of ore extracted from any mine was less than one ton we have omitted it. The publication of the return is delayed beyond the usual time, which is owing to the fact that the Assessor experienced much difficulty in procuring the details from the mills. The statute allows one month after the expiration of the quarter for the collection of the data for the return, and in this instance the full time has been consumed:

Names.	Tons.	Lbs.	Avr. T.
Black Ledge	5	569	$210 32
Buel North Star, 1st class	21	422	182 56
" " 2d class	16	161	51 52
Cortez (no name given)	47	1,678	238 69
Dolerhide	8	1,735	239 90
Diana	195	717	91 30
Florida	101	1,304	351 96
Farrell Co.	12	981	204 67
Fenian Star	3	.....	36 44
Fuller	4	.....	349 34
Great Eastern	137	669	345 93
Glasser	2	700	200 75
Hoya	1	.....	192 58
Kelly and Ensign	3	81	129 18
Leggett	5	1,121	50 62
Lady Franklin	1	.....	134 48
Livermore	4	738	267 54
Magnolia	13	1,536	371 82
Mountain View	1	.....	150 78
Miller & Co	1	1,836	234 45
North Star, Manhattan Co.	384	360	141 37
Morgan & Muncey	28	782	103 36
Miller	1	634	76 36
Montauk	1	1,295	144 10
Martine	1	900	88 90
Niagara	3	148	60 08
O'dair	4	1,753	284 71
Pocahee	1	.....	86 66
Patriot	1	467	64 08
Richmond	5	667	53 73
Red Bluff	1	650	55 01
Stranger	3	1,635	48 00
Samaritha	7	254	132 88
Swancy	1	1,805	520 05
Story	3	1,700	204 98
Savage Consolidated	290	.....	62 77
Silver Lead	3	1,491	88 46
Timoke	100	1,012	276 59
Vineyard	5	1,392	66 01
Van Tyne	1	.....	133 33
Washington	4	1,561	310 37
Yankee Blade (no name given)	1	427	450 04
W. C. Blake	1	1,628	76 08

On comparing this table with that of the preceding quarter a marked improvement will be observed in the average yield of the ore produced by several of the leading mines, as well as in their increased production. For instance, the Florida produced during the last quarter 101 tons of ore which gave an average yield of $351 96 per ton, against 13 tons yielding an average of $255 60 the previous quarter; the Diana, 195 tons, which averaged $94 30, against 143 tons which averged $91 18; the Great Eastern, 137 tons, which averaged $345 93, against 87 tons which averaged $217 94; the Magnolia, 13 tons which averaged $371 80, against 6 tons which averaged $338 23; the North Star of the Manhattan Company, 384 tons which averaged $141 87, against 69 tons which averaged $83 90; the Timoke 100 tons which averaged $276 59, against 79 tons which averaged $148 41; and the Savage, 290 tons which averaged $62 77, against 451 tons which averaged $103, 25. The falling off in the quantity and quality of the ore from the Savage is remarkable, but we believe the explanations that only a small proportion of the ore reduced was extracted from the mine during the last quarter, but that the great bulk of it was taken from their large dump pile. On the other hand the great improvement in the production of ore from the North Star of the Manhatten company, and its increased average yield of bullion, is more remarkable. Perhaps the most striking increase, both as regards the product of ore and its yield of silver, is presented by the Florida, the exhibit for the two quarters being: December 31, 1866, 13 tons, averaging $255 60; March 31, 1867, 101 tons averaging $351 96. A number of the mines embraced in the present return are strangers in the previous list; indeed, we have reason to believe that several of them are not the names of mines but of the persons who delivered ore to the mills for reduction. Two lots are returned from "Yankee Blade," not from the mines bearing that title—both of which belong to companies and are lying idle—but from that section of Reese River district. One large lot of 47 tons of high grade ore is returned from "Cortez:" we presume it was brought from the Cortez district, but from what particular mine—whether from the St. Louis, Taylor and Passmore, or Nonesuch—is not mentioned in the quarterly statement of the Assessor. This loose and inaccurate method of making the return is in direct violation of the statute, and defeats one of its principal objects. Every mill, or arastra, or reduction works of any character, is required by the law to keep an accurate list of the name of every mine from which ore was delivered, and to furnish a sworn statement of the same to the Assessor. Of course in a district having the numberless locations of Reese River, a person bringing ore to mill may easily impose a fictitious name on the superintendent: but the name of the mine should be required in every instance, and no such unmeaning entries as "Yankee Blade," "Cortez," etc., should be allowed to appear in the statement. How and against whom shall the officer assess the ore returned from "Yankee Blade" and "Cortez?" It is the merest farce. The Assessor cannot comply with the law which requires him to give, in his assessment roll for every quarter, "as particularly as possible," a description of the mine from which the ore assessed was obtained. It is to be hoped that the Assessor will exact a decent compliance with the palpable requirements of the law in future.

Montana.

The Virginia City *Democrat*, May 2d, continues to criticise Commissioner Taylor's report thus: Our statistics given in several previous numbers of the *Democrat*, showing the errors of Mr. Taylor in his report to Congress, has brought to light the authority on which Mr. Taylor asserts as a fact that the ores to "pay in Montana, even when protected from hostile Indians, must yield $40 per ton to pay." We must therefore excuse Mr. Taylor and inform our readers that the statement was made on the authority of N. P. Langford, United States Collector of Internal Revenue of this Territory. Having now arrived at the authority, let us follow up the enquiry in frankness, candor and truth, for if Mr. Langford is correct in his deductions the public should know it; if wrong, the Territory should demand of Mr. Langford a correction; for it is certain that so high a yield as $40 per ton, by mill process, is not to be obtained from very many of our quartz districts. We have shown that the ores of the Kearsarge, as worked by the Hawkeye mill, have paid well with an average of far less than $40 in working seven hundred and seventy-one tons, and that the ores of the Gold Hill, Brownville and Galena lodes of Hot Springs have all been worked at Cope's mill with profit, and yet at a yield of less than $40 per ton. These facts have been submitted to Mr. Langford and have been admitted by him. His argument, however, is, that the report is correct, as the remark of $40 was intended to apply to the twenty-five hundred lodes prospected and recorded in the mining centres of Bannack, Virginia and Helena; and as the majority of these were known to be very narrow, only from six to eight inches in width, encased in rock of the hardest texture. The cost of extracting, at the high price of labor, warranted the statement to be published to the world that our ore must yield $40 per ton to pay. We submit that but few miners of Montana would be so reckless as to attempt to work by mill process any vein of ore that yielded only $40 per ton, with a seam of six or eight inches. We cannot agree with Mr. Langford as to the width of most of the auriferous veins of the Territory, but admit that very many of that class have been "prospected and recorded" and are now in the market, and are known as "Wild Cat." In short, Mr. Taylor should have qualified his statement before publishing to the world that which would prevent capital from being invested.

From the *Post* of May 11th, we take the following items. The mines in Montana Gulch are to be worked by the Boulder Ditch company. The estimated cost of the ditch completed is $50,000. The company expect to be at work by the last of July .....Reports from New York and Cave Gulches represent times as getting quite lively. The claims are paying well, many new ones being opened, and every thing generally is assuming a bustling, go-ahead look.....Mr. James M. Vivion has constructed a flume across Last Chance gulch, in the vicinity of the Discovery claim. The flume is 400 feet in length, and is for the purpose of supplying water to the bar on the northeast side of the gulch. .....But little was done in the way of taking out money in Last Chance gulch during the first week on account of there being no water in either the Helena or Yaw-Yaw ditches, and what came down the main gulch was only sufficient for a few sluice-heads. There will be water in both the above named ditches in a day or two, when every claim in the gulch will be enabled to run. .... A clean up of two hundred and two ounces was made at Turnley's mill on last Friday, from Whitlatch Union ore. .....A Lincoln Gulch correspondent says: This gulch is situated northwest of the celebrated McClellan gulch, and distant twelve miles. In any of the claims from one to five dollars to the pan is the general prospect. There has been from $15 to $20 to the pan and more obtained, but they are exceptional cases. There is plenty of prospecting to be done. It is a dry gulch from ten to forty feet deep, and excellent drifting; a ditch belonging to the miners, supplying water from a large creek near by in summer and fall. In the spring it has plenty from its own source, as it is very long—eight or ten miles. Many of the mines are paying well.....A correspondent of the Helena *Herald* writes from Henderson Flint Creek district, under date of April 29, as follows: Very few are aware that there is so rich and important a mining camp in this part of the Territory; but from personal inspection I can say that there are quite extensive and paying diggings here. The main gulch is prospected for about two and one half miles, and pays well nearly the whole distance. There are also extensive bars along the gulch that prospect exceedingly well. Three large ditches are about completed to supply the bars with water, one of which has already cost about $30,000. The bars prospect from the top down, and in the gulch they are working about four feet of pay dirt, and have only from three to five feet stripping. There are now over two hundred miners at work and preparing to wash, and there is not one idle man in

the camp. This flourishing settlement has been laid off into a town, and already it contains four stores, two blacksmith shops, several butcher shops, saloons, and numerous dwellings. All the places of resort and business are doing well. Within one month, there will be work for at least five hundred miners. I was astonished to find here so large and extensive a camp. The snow is nearly gone and the grass is springing up fresh and green. Some bars have been struck on the main creek, and ditches are being dug to furnish water. Outside of Henderson gulch there has been but little prospecting done, and I think there is as favorable ground for prospecting for new diggings in this vicinity as any place I have seen in the Territory, and with good facilities for working. This town is twelve miles from the Mullen road-crossing of Flat Creek, and twenty-two miles from Gold Creek. The silver mines are situated about twenty miles from here by the mail now travelled, but in summer can be reached in about thirteen miles. I saw some very rich specimens to-day from a new ledge struck there. Everybody here expresses unbounded confidence in the great silver lodes that have been opened. .....The exposure by the JOURNAL OF MINING of the Hubbell & Patten Gold and Silver Mining Company, of Philadelphia, has called forth the following from the Virginia City *Democrat* of May 9th: We give in our mining column some comments from one of our best exchanges, the AMERICAN JOURNAL OF MINING, of New York, for the benefit of all who may think that undeveloped quartz property can be sold by flaming advertisements and estimated yields by cubic yards, at a depth of 1 000 feet, when the truth is, that probably there is not one of the lodes composing the 11,960 feet that has been tested to the depth of 100 feet. Such men had better remain at home, and such "companies had better never been born," for the true interest of the Territory. We are not afraid that the truth should be made known; we shall suffer nothing by it, but such statements as this, we do and shall protest against, and as far as we can, will expose. Capital has already (as we are advised) been very injudiciously expended in the immediate vicinity of Trout Creek, and to be "bilked" again by such statements is more than we can stand. That there are as rich lodes in Trout Creek district as any in the Territory we admit, but to estimate by the cubic yard is wrong, and is inconsistent with the fact, for the lodes of the district are generally narrow.

Colorado.

The Golden City *Weekly Transcript*, May 23, reviews Colorado in 1867 as follows: Prospects for a busy and profitable season were never better than at the present time. The gold mines of Gilpin and Clear Creek counties are being worked with renewed vigor, and with the new California process, the yield will be more than doubled over any and all the former processes. The most refractory ores are made to yield nearly all their precious metals by this discovery, as well as the more easily worked ores, and that Colorado is on the eve of a revolution in gold saving does not admit of a doubt. Any Thomas who may still be doubting, can easily satisfy himself on this point by visiting the works of Reese, Bruckner & Krause at the Excelsior Mill below Black Hawk. Everybody in the mines are looking forward to a season of great prosperity, and say prospects here never were so good as now. No one need hesitate to come to Colorado this year, fearing dull times, for certainly our dark days are over. Indians have not disturbed travel on the Platte, and arrangements are such as lead us to believe there will be no trouble with the n on that route, as the rapid advance of work upon the railroad up to the valley of that stream will preclude the probability of any trouble between its terminus and the mountains. The Government seems to be in earnest, too, in preventing further trouble upon the Smoky Hill, so that in a very days no danger upon that road need be apprehended. Besides the great impetus given to gold mining, silver will, ere this paper reaches some of our far-distant eastern subscribers, set many crazy almost: as in a few days Dr. Johnson, of Georgetown, will have out near a ton of the pure metal, for he has large quantities of ore unequalled in richness in any silver region further west. A thousand dollars per ton is going to be a common yield when we get fairly started, and by next November silver bullion will be sent east by the ton. Georgetown, the present centre of the silver excitement, is already a town of importance, and only held in check by a scarcity of lumber; this, however, will soon be overcome, as a fine mill is now in operation, cutting about ten thousand feet per day. Much excitement exists in regard to town lots, and the flat below Georgetown is fast being claimed, and foundations put on—of course of a temporary character, merely to show intention to build. However, there is room for all who go there, and no trouble will be experienced by bona fide settlers in getting lots free, with the exception of a fee for surveying. Below Georgetown a number of fine veins are being opened and promise rich results. On the north side of the Creek, between Empire and Downeyville, a splendid silver lode has recently been discovered. It is near Clear Creek and carries a vein of rich ore some twelve or fifteen inches wide, and altogether is one of the most promising mines in Colorado. The discoverer sold out his interest (one-half) for a small sum, which he now regrets, and with good reason. Altogether, Clear Creek is in a very prosperous condition, and bids fair to become the centre of mining operation within the year. One great need of the whole valley is a better communication with the plains, and if capitalists will build the road from Guy gulch to connect with the Idaho and Mount Vernon road it will prove a big paying investment, and greatly enhance the value of property on the Creek, by reducing freights and making travel comparatively easy. Let it be built at once. Many parties are preparing to go to Snake River as soon as the Range can be crossed, which will be about the first of June. Snake is considered by many to be the centre of the silver belt, the lodes being richer and the crevices much stronger; this season will see several furnaces put into operation there, and it must prove the silver mines to be as extensive as they are rich. Altogether, prospects were never half so good as now, both for gold and silver, and no need to "halt between two opinions," who wishes to come west.....Georgetown correspondence, dated May 18, of the same paper, states that the works of the Georgetown Smelting company, in charge of Dr Johnson, are in full blast, running ore from the Anglo-Saxon and New Boston lodes. The latter being rich galena, is used as a flux for the sulphuret ores of the former. The Doctor has on hand quite a "litter of pigs" of lead containing silver, and expects to show a respectable quantity of pure metal soon. The mill in charge of Col. Hale is to have some additions soon, under the management of Mr. Martine, I understand. Mr. Rockwell intends to put up a mill soon, but like a man of sense, proposes to use well proven machinery, and employ practical men to erect and run it; if his present plans are carried out he must meet with success, as he has undoubtedly some of the best mines in the district .....The same paper is informed that in James county there are 300 men engaged in mining, building and prospecting, etc. Mr. Gray had taken out a good showing matter, which has assayed extremely rich. His smelting furnace is considered a decided success. An arastra, belonging to Messrs. Brown & Blevins, has been running for several days upon ore from the surface of the Cashier lode. The amalgam was looking fine, but none of it had been retorted. The twelve stamp mill of Messrs. Beebe & Dickingson was about ready to run. They have a handsome pile of quartz at the mill. Mr. Torrey informs us that considerable excitement and indignation existed at James Creek on account of some parties having recorded some of the best lodes in the district under the late United States Mining Law, without consulting the rightful owners.. ... From the Central City *Times*, May 21st, we condense as follows: A few days since a good yield was realized from three and a half cords of gold-bearing quartz, taken out of John Mendell's claim (No. 1 east on the Gunnell lode, Eureka District), at a depth of 140 feet. It yielded 58 ounces and 11½ pwts. of gold retorted, worth in currency (at $21 per ounce) about $1 232.00. It was run in his own mill .....From 250 lbs. of third quality of Adeline Lode ore, Central District, there was obtained at the rate of $21 60 per ton or about $189 per cord. It was run in Phelps' Terrace Furnace. The sample worked, would, in the opinion of Mr. Hinds, who furnished the ore, not yield over $60 per cord in a stamp mill. The furnace is not so well adapted for running very small quantities, as a great portion will necessarily remain on the terraces.

California.

A posted Californian writes, under date April 27: California gold mining is generally prosperous except where tremendous *big* prices have been paid for *small* things. I see every now and then, as I roam over the country, some "New York operation," and think they would have done better to have given their money to some charitable institution, instead of injuring mining as a legitimate business by acting so injudicious as many companies have done. I sometimes feel like sitting down and slashing things, when I see how readily they accept of men to transact such important (because expensive) business, who have not the slightest practical experience. California is a big field for capital, and millions of money can be invested to a profit, and a large profit at that, but no one ought to invest one dollar, unless there is to be both experience and judgment to manage it, and I would add further—hold the general business management in their own hands. We are now reviving from the terrific stock humbug operations of years ago, and it is to be hopen that it will not be renewed.

Placer.—The Auburn *Herald*, April 27, says: The Green Emigrant co. have been taking out the gold this week almost by the pound. As much as $150 has been taken out of a single pan of pounded quartz. A gentleman offered to make a bet a few days since, that the company would take out in one day, this week, $2,000. The Golden Rule Claim, near Horse Shoe Bar, have their twenty-stamp mill nearly completed.

Nevada.—From *Transcripts* to May 8th, we learn as follows: The French co., at North Bloomfield, is working twenty-two men. After a run of five weeks they took out $7,100 .....The English company, at Badger Hill, near Cherokee, are washing on the blue gravel channel. They employ twenty men, and at the last clean up averaged a profit of five dollars per day to the man .....The Russian Mine is located on Manzanita Hill, in Bridgeport township, is owned by three men, and five hands are employed in working it. At the last clean up, after a four weeks' run, they got $1,900, giving a dividend of $360 to each of the owners, after paying expenses. .....The mines of the county are beginning to yield large returns. From a small mining camp, with not a score of inhabitants, $11,000 in dust was shipped in a single week lately. .....The U. S. Grant mine, located at Carlisle, Meadow Lake district, is yielding handsomely. The mill has been recently overhauled and repaired, and after a week's run, a clean up was had, and between $1,500 and $1,600 was obtained .....The Granite Tunnel company, Liberty Hill, Birchville district, has commenced washing again.....Rich gravel was struck in the gravel claims of Evans & Co., in Birchville district. It is estimated that they will take out $20,000 the next run.....At Rocky Bar, near Washington, Root, Fish & Co., after one week's work with five men, cleaned up about $800. The gold at Rocky Bar, and all along the bars of the Yuba, is as coarse as large sized beans, and is said to be of very high grade. The lot we saw was valued at $17 50 per ounce. Parties are engaged in sinking for the old river bed about Washington, and at a place called Kino Bar very flattering prospects have been found.....The following figures, for which we are indebted to County Recorder, J. C. Garber, will show the extent of mining operations in the county. Since July 28th, 1856, 3,904 locations have been made in the county. These vary in extent from a few hundred to thousands of feet. The number of locators in the same time were 16,848. All these claims are about one hundred feet each, with an extra hundred for discovery. Taking this estimate, the ground located would be over 4,590,000 feet in about eleven years. The amount of money expended by miners during that time in recording claims, is $23,424. Besides these locations, a large number of claims were recorded with the mining district recorders. Until within a very short time all the hydraulic and gravel claims were recorded in this way. These statistics come down to the 16th inst., and are obtained from an index of mining claims just completed by the county Recorder, in which is given the name of every company locating ground in the eleven years of which records are preserved. The books prior to that date were destroyed in the fire of 1856.

Sierra.—A correspondent of the *Bulletin* says: The Oak Flat company are working and getting fine rock. The Eagle company, an extension of the Oak Flat, for six hundred feet of which it paid $3 000, stands idle, but it is believed to be one of the best ledges in the State. The Union, situated at West Ravine, a mine that has paid over $35,000 dividends, after building an eight-stamp mill, running tunnels, sinking shafts, etc., is idle for the same reason, failure of members to pay assessments. The Twenty-one company, I hear, have a fine ledge some six or seven feet thick. They have a fine little mill standing alongside their shaft. The People's Gold and Silver Mining company have erected a fine ten-stamp mill, on Kanaka creek, just below their ledge. The Fac Smile, another excellent mine, located just below the Union, in Wet Basin, is now lying idle. The Masonic & Highland, a gravel mine, owned by Langstaff & Harger and P. A. Lamping, of Dowaieville, is paying large dividends.

Indiana.

A correspondent of the Indiana *American* is assured that Brown county is rich in gold. He states: I have visited the gold mines, where I found Mr. J. W. Macy, a native of Henry Co., living in Hamlin township, at work, and making, as he said, about $2 50 per day and wasting about an equal amount; that is, he wastes in washing about one-half of what he digs, and an experienced Californian would save $5 or more. The specimen you saw was shown to Dehume & Co., corner of Walnut and Fourth streets, Cincinnati, and by them pronounced very fine gold, and worth four cents per grain, or about $18 per ounce. This is what is called drift gold, and is known to be in several other localities in Brown county. Mr. Macy was at work about five or six miles south of the Martinsville branch of the I. & C. Railroad. I will state I was incredulous about this Brown county gold, and supposed people were mining mica slate, or perhaps the sulphuret of iron; but the gold you saw was taken, at least a part of it, by me, from the sluices of Mr. Macy, and is thought to be there in considerable quantities. I have no interest in Brown county lands, but merely state what I saw and verily believe. All the fixtures of Mr. Macy for gold washing are probably not worth $10; and if he could make $2 50 per day, it is believed, with suitable apparatus for saving the fine particles—say with quicksilver in the rockers—much more could be made. It will require work, and hard work, but doubtless will pay well.

Special Correspondence Journal of Mining

Canada.

MADOC, Canada West, May 31, 1867.

Having spent the last two weeks in the newly discovered gold region of this section, I send some facts in relation to it. Leaving Boston and proceeding via Albany to Cape Vincent, N. Y., crossing the St. Lawrence to Kingston and taking the Grand Trunk railroad from that point west, the tourist arrives at Belle-

ville. If, however, he can spare a few hours he will find himself amply repaid if he rides up the beautiful bay of Quinte in the steamer of that name—the trip being a delightful one. Belleville is a place of considerable size, but, like most other Canadian towns, a resident of the States misses the appearance of progression and energy, so apparent with us. Here is a good hotel—the Defoe House—and from this point there are several lines of stages leaving twice a day for Medoc, El Dorado and Tudor; but a span of horses and buggy are of course preferable. A drive of twenty-six miles brings you to Madoc, where searchers after the precious metal most do congregate. It is a small town, containing nothing of interest, although it has shown signs of activity of late. A squad of mounted police have, within a short time, gone into barracks here, and daily scour the country for the purpose of protecting the interests of the Dominion—for so we may now term Canada. Proceeding on the road about seven miles further, we reach two villages, situated about half a mile apart, known as Lower and Upper El Dorado. Six months ago this spot was a barren country, with only two or three poor log houses upon it; now each settlement can boast of about thirty frame buildings, the majority of them being occupied as taverns or saloons. It is here that the famous Richardson mine is situated, and as its history is rather interesting I will give you an outline of it: About six months since, Mr. Richardson conceived the idea that there was gold on his lot and commenced sinking a shaft upon it. At a depth of twelve or fifteen feet he obtained a small quantity of the precious metal, and a man named Carr, hailing from Boston, being in the vicinity at the time, he executed a bond in favor of Carr, agreeing to give him twenty acres of land, including the shaft, for thirty-five thousand dollars, if paid within thirty days. On the strength of this bond Carr endeavored to resell the property at a much higher figure, but being a person of little influence he failed to accomplish his object, and the bond was forfeited. Operations had not been suspended, however, and at about this time a large cavity was reached, from which several thousand dollars' worth of gold was taken. Mr. Benjamin Lombard and a Mr. Hardin, of Chicago, both men of large means and respectability, saw the mine and immediately purchased it of Richardson for the sum named in the old bond to Carr, paid the money and received a deed of the property. They immediately made arrangements to have expensive machinery sent out, and in the mean time the yield of the mine was unprecedentedly large, when suddenly their operations were checked by an injunction granted on an application in the name of Carr. It appears that a number of persons in Belleville associated themselves together, got Carr's old bond on the promise of giving him four thousand dollars if they obtained possession of the mine, and commenced a suit on the ground that the wording of the bond was such that time was *not* the essence of the contract and consequently Richardson was still bound to give them a deed of the property upon the payment of the thirty-five thousand dollars. Of course, by this means all further work was stopped and the mine is now completely filled with cord wood, and a high barricade of the same article has been built around it. The case has created an intense excitement in this vicinity, and the miners in particular feel very bitter towards Carr and the Belleville people who have joined with him, and say they are preventing the development of the country by the course they are pursuing, which certainly appears to me to be an attempt to extort blackmail from the fortunate possessors of the mine. Leaving El Dorado I pushed on towards the north, stopping to examine several mines from which colors (i. e. specks of gold) were said to have been taken. I left the road at Bannockburn and walked a mile and a half through the woods to the "Caraboo mine." Here good results have been obtained, and I descended the shaft, which is about twenty feet deep, collected a pan of dirt from the bottom and from it panned some nice colors of the value of fifteen or twenty cents. My companions followed my example with a like good result. Returning to Bannockburn I continued towards the north, passing the river Jordan—(I can now actually say I have been "to the other side of Jordan")—and after a drive of ten miles, passing through what is known as "The Hole-in-the-Wall," where the scenery is fearfully grand and nature shows herself in her most imposing aspect, I arrived at "Jelley's" in Tudor. Here I obtained some "colors" from a stream near by and then visited the property of the Tudor Lead Mining Company, where the company are mining galena (lead) with highly satisfactory results. Leaving their lead mine I next examined a vein of quartz on another portion of their property, where they are sinking a shaft in the hope of finding gold. The indications were excellent, and I have to-day heard a report to the effect that they had reached a deposit of the precious metal. I next visited two other lead mines and a gold mine, from which colors are said to have been taken, in the immediate vicinity, after which I returned to this place. I have endeavored, in the foregoing, to give a plain statement of what I have seen, without indulging in any flights of fancy about the excited state of every one here on the subject of gold, the talk of "indications," piles of money, colors, &c.; but there is no doubt in my mind that this country is wonderfully rich in the precious metals. Certainly one hundred thousand dollars worth of gold was taken from the Richardson mine during the short time the owners were allowed to work it, and I am informed on good authority that one hundred and fifty thousand dollars' worth of gold remains in the shaft in such a position that it could be raised within a few days. The extent of this new gold region is not yet known. It is at present mostly confined to the townships of Madoc and Tudor, although much prospecting has been done, in some cases with success, in Marmora, Lake and Elzevir. The gold is not confined, as is generally the case in gold-bearing countries, to alluvial washings, but is found in the native quartz rock, in the ocherous matter and in the large beds of black magnetic oxyd of iron, that is so abundant in that formation. It may be found in its native state, in small grains, in spangles, in crystals so small as to be invisible to the naked eye, and also in large grains and lumps. It may also be found imbedded in masses in quartz, particularly that which traverses talcose or chloritic slate, while at other places it may be found mechanically enclosed by quartz and decomposed pyrites or ochreous matter. I can see no reason to doubt that other valuable mines will be discovered within the limits of this region during the summer—a consummation devoutly to be wished by the inhabitants, the country being of little value aside from its mineral wealth. In another letter I will give you some remarks upon other mineral deposits, which are here found in paying quantities. SANGFROID.

P. S.—Since writing the above I have become convinced of the truth of the report that the Tudor Lead Mining Company have struck gold in considerable quantities.

COAL & IRON.

Michigan.

The Negaunee *Mining News*, of May 25, says: Since the opening of navigation there has been shipped from the Pioneer Furnace in this place seven hundred tons of pig iron, a considerable portion of which was consigned to Dousman and Elmore at Green Bay. .....Iron ore is being sent forward to Marquette and Escanaba for shipment, at the rate of not less than a dozen trains a day, judging by the constant jar and rumbling of the cars past our office door. The trains will average at least thirty cars, of not less than six tons to the car, making a total of about 2,000 tons daily. Two hundred new cars are on the way for the Peninsula road, which will increase their facilities some, but not nearly to the extent desired. Twice that number could be used to advantage. Some vessels have already made their third trip from Escanaba to Cleveland, and there has been at no time since the opening of navigation, less than three or four vessels at the dock loading with ore. The same activity prevails at Marquette, and the prospect is that the shipments of the present will greatly exceed those of last season.....The Superior *Gazette* says: The amount of iron consumed by the manufacturers of Pittsburg is almost incredible. The chief supply has, until a recent date, been from the Pennsylvania mines, and in the adjoining states; but this being insufficient, she turned her attention to the Missouri mines, and has, since the railroads have afforded facilities, for transport, drawn largely on the Iron Mountain; and in addition has, within a short time, imported over thirty thousand tons for operations the coming season. But, says the Chicago *Journal of Commerce*, her preference is for the Lake Superior. During the last year the product of the great iron mines of Michigan was 208,784 tons. There was shipped from Marquette alone during the season of navigation 207,000 tons of ore, and 18,000 tons of metals and blooms. A large part of this went to Erie and other points, and 169,500 tons were delivered at Cleveland. Of this Pittsburg received 57,000 tons over the railroads from Cleveland. Most of the balance went to the smelting furnaces on the Mahoning and the Shenango, and the product found its way to Pittsburgh for her rolling mills, forges, and foundries. The demand for this quality of iron at Pittsburgh would be double, if there were means of transportation so that it could be brought there; for, as it is now, there are but five blast furnaces among the thirty-one rolling mill establishments. More are in prospect, and one or two are in process of construction. Some idea of the amount of iron used will be seen from the fact that 80,000 tons of ore alone were brought to Pittsburgh during last year. This amount would be largely increased if the ore could be brought conveniently. The Brady's Bend Iron Company will use, if they can get it, 30,000 tons per annum. Other furnaces would do equally well, if they could get the ore; and several large furnaces in the country are in the same condition. All these want the Superior iron.

Pennsylvania.

Mr. T. H. Winterstein, of Port Carbon, is working the out-crop of a vein of black-band, near the McGinnis shaft, on the opposite side of Mill Creek. The vein is about sixteen inches in thickness at present, and appears to be widening as it goes deeper ..... Complaints are made by persons who are desirous of developing the black-band and other ores in this county, that they are unable to obtain leases from the land-owners here, except upon such terms as would render it almost impossible for them to mine the ore with any chance of profit. If such is the case, our land-owners are pursuing a very blind and imprudent policy. It is to their interest, and to the interest of every business man in the country, that our mineral wealth should be developed as extensively and as rapidly as possible. To throw away what must be certain gain in the future, in the mere hope of acquiring present profit, is improvident and foolish.

COPPER.

Nevada.

Battle Mountain District.—The Reese River *Reveille*, May 3, gives the following description of the prominent features of this district, which it says lies seventy miles due north of Austin, and terminates at the Humboldt river. The copper mines occur in a range of mountains which run north and south for the distance of twenty miles, and is surrounded on all sides by low table lands. Reese River lies on the east, the Humboldt on the north, and on the west and south there is a continuous valley to Fish Creek. The mines embraced within the district, so far as discoveries extend, lie in two separate and distinct belts; the first is situated within four miles of the line of the Pacific Railroad, and the second is fifteen miles distant from that line. Both sections of the district are of easy access at all seasons of the year; there is a very gradual descent to Reese River valley—indeed, the country is almost level—and it presents a fine natural road for every purpose. Thirty locations have been made on the line of the first named belt, and forty-five on the line of the second. As far as the ledges have been developed their general course appears to be north and south, and they dip at an angle of 40° to the horizon. The veins occur in granite, while the rock intervening between the two belts is slate. The ledges are generally large, ranging from three to twelve feet in thickness, and as far as developed, they show positive indications of being true fissure veins. They do not outcrop greatly, rarely jutting a foot above the surface. A variety of ore has been developed in the district, among which are five specimens of native copper, green and blue carbonates, red oxyd, copper glance, and gray copper. In the collection of minerals sent to the Paris Exposition there was a massive and very beautiful specimen of red oxyd of copper from this district. Several of the ores yield largely of silver, and assays have been made which gave from $5 to $10 per ton. Of the locations made in the belt nearest the line of the railroad, the following are the most fully developed and promising: the Troy, Wasp, Mary Louisa, Enterprise, Hudson, Mountain Lark, Copper Star, and Southwest. The following locations in the second or more distant belt are worthy of special enumeration: the Trojan, Blue Bell, Victoria, Pride of the West, President, Dolphin, and Andy Johnson. The prospects of the district, with its numerous large veins of superior copper ore, are not surpassed either in this State or in California. Battle Mountain district was the scene of a sharp conflict with Indians a few years ago, and hence its appropriate name. Two of the discoverers and another emigrant, while making their way from the States to California in 1859, were attacked at that point by a band of Indians, and but for the opportune appearance of a small party of United States soldiers, they would have been murdered. Attracted by the discoveries of mineral throughout the State, two of the rescued party returned to the spot about a year ago for the purpose of prospecting, and were rewarded by the discovery of copper.

Michigan.

The Hancock *Mining Gazette*, May of 18th, says: The Central discharged about 63 men a few days ago. Some of the discharged portion have been taken back, and we think by the first of next month, the places of the men discharged will be filled up. .....The Copper Falls had, and still has a fine lot of mass copper at the harbor awaiting shipment. At no time last season did we see as much or as heavy copper as we may see now. .....The drift of the Eagle Harbor Copper Co., Essex, south from No. 2 shaft on the second level, it is thought has reached the south belt of amygdaloid. The vein in this drift has averaged about a foot in width, carrying some copper, but the mineral is scattered also through the country. .....At the Resolute preparations are being made to sink Steiner shaft to the third level. The drift north on the second level is not being worked at present, although the vein, as we have previously stated, improved constantly as they worked north. We cannot say when this drift will be started again. South on this level work is progressing, the vein in the drift being fully four feet in width, and rich in stamp stuff and barrel work. Mr. Hitchcock, heretofore agent at the mine has accepted a clerkship at the Amygdaloid under A. B. Wood, Esq., but still retains a general supervision over the Resolute work. .....The product of the Delaware, a prosperous young mine, was the past month over 23 tons on a cost of about $5,000, and it is confidently believed that it will be increased to 30 tons for the month of May without a corresponding increase in the working expense of the mine.

MARKET REVIEW.

FRIDAY EVENING.

Gold and Silver Stocks.—Most all the stocks show an advance from last week's quotations, business, however, light. At first board to-day LaCrosse sold at $1 40; Quartz Hill, $1 70, s 3, $1 65. After call Ohio & Colorado brought $1 10; Columbia G. & S. 06c. At second call Consolidated Gregory $6 55; Corydon, s 10 and s 3, $1 60; La Crosse $1 55@1 40; Quartz Hill $1 66@1 68; Seasonderter, s 3, $10 25.

	June 1.		June 7.	
	Offered.	Asked.	Offered.	Asked.
Alameda	....	2 00	....	2 00
American Flag	50	75	75	85
Atlantic and Pacific	1 50	2 40	1 10	3 40
Bates & Baxter Gold	....	2 00	75	1 50
Benton Gold	75	1 00	80	90
Bobtail Gold	....	3 00	2 40	3 40
Boscobel Silver	....	....	....	....
Bullion Consolidated	....	1 50	....	1 60
Burroughs Gold	....	....	....	....
Central Gold	....	....	....	....
Crozier Gold	....	....	....	....
Columbian G. & S.	50	60	60	65
Consolidated Colorado	....	8	....	10
Consolidated Gregory	6 50	6 55	6 50	6 65
Corydon	2 20	2 25	1 55	1 60
Des Moines Gold	....	....	....	....
Downieville Gold	....	10	....	10
Eagle	....	....	....	....
Gilpin Gold	....	....	....	....
Gold Hill	....	3 00	....	4 00
Gunnell Gold	2 50	2 60	2 50	....
Gunnell Union	10	25	10	....
Grass Valley	....	....	....	....
Holman	14	15	14	15
Hope Gold	....	70	....	50
Keystone Silver	....	....	....	....
Kipp & Baer Gold	50	70	....	60
La Crosse Gold	50	60	1 35	1 40
Liebig	....	....	....	60
Liberty Gold	....	3	....	7
Manhattan	....	....	....	....
Montana Gold	5	25	....	50
New York	75	90	70	90
New Gold	....	6	4	7
Ohio & Colorado G. & S.	1 10	1 15	1 10	....
People's G. & S. of Cal.	42	....	50	60
Quartz Hill	1 71	1 74	1 62	1 65
Reynolds Gold	4	5	....	4
Rocky Mountain Gold	70	75	50	75
Seaver Gold	7 50	....	7 50	16 00
Smith & Parmelee Gold	4 60	4 75	4 25	4 35
Seasonderrier	10 20	11 00	10 25	....
Symonds Fork	75	1 50	75	1 50
Texas Gold	....	15	12	19
Vandeburg	....	....	70	75
Yellow Jacket Gold	....	10	....	....

Copper Stocks.—Rockland sold at first board yesterday at $8 70.

	June 1.		June 7.	
	OFFERED	ASKED.	OFFERED.	ASKED.
Caledonia	....	....	....	10 00
Canada Copper	....	60	....	50
Davidson Copper	90	1 00	....	1 00
Hilton Copper	....	1 00	....	1 00
Hancock	....	....	....	....
Montana	....	4 00	....	....
Rockland Copper	....	8 75	8 25	8 75

Petroleum Stocks.—Rathbone Oil Tract sold at 25c.

	June 1.		June 7.	
	Offered.	Asked.	Offered.	Asked.
Beaucheff Run	....	3 10	2 50	3 00
Buchanan Farm	10	20	....	15
Beaucheff Mutual	65	75	....	....
Central	35	15	40	85
Clinton Oil	....	2 00	....	1 50
Cherry Run Special	....	....	....	....
Excelsior	....	15	....	15
Manhattan	....	20	....	15
N. Y. and Alleghany	....	4 00	....	3 50
Pit Hole Creek	50	1 00	50	75
Rynd Farm	6	20	....	20
Rathbone Oil Tract Co	....	....	....	25
United Pet. Farms	5	21	6	15
United States	2 00	4 00	2 60	3 50
Union	....	....	1 30	3 00

Lead Stocks.—Wallkill sold s 3 at 56c.

Miscellaneous Stocks.—Rutland Marble, $8; Wilkesbarre Coal Co., 75; Del & Hudson Canal, 153½; Mariposa Pref., 19½@20; Pacific Mail S. S. Co., 137½@138.

Government Stocks.—Are firmer.

U. S. 6s, 1881, reg	108	@108
U. S. 6s, 1881, coupon	112	@112½
U. S. 6s, 5-20s, 1862, coupon	109⅜	@109⅝
U. S. 6s, 5-20s, 1864, coupon	105⅞	@106
U. S. 6s, 5-20s, 1865, coupon	106⅜	@106½
U. S. 6s, 5-20s, 1865, coupon, new	108⅛	@108⅜
U. S. 5s, 1871, cpn	111½	@ —
U. S. 5s, 1871, reg	102	@ —
U. S. 7s, 1874, coupon	106½	@ —
U. S. 10-40 coupon	99½	@ 99⅝
U. S. 7 30, August, large	106	@106⅛
" June, large	105⅜	@107⅛
" July, large	105⅜	@105⅞

Foreign Exchange is firm. Bills at 60 days on London are quoted at 109¼@109⅜ for commercial; 109⅝@110⅛ for bankers'; do. at short sight, 110⅜@110⅝; Paris at 60 days, 5.18¾@5.12½; do. at short sight, 5.12½@5.10; Antwerp, 5.18¾@5.12½; Swiss, 5.17½@5.12½; Hamburg, 36⅛@36⅜; Amsterdam, 41@41⅛; Frankfort, 41@41⅛; Bremen, 79@79½; Prussian thalers, 72@72½.

Gold was 136½ at 2 P. M.

Copper—Market quiet—nothing doing; prices ranging from 23½@24c.

Iron.—Very quiet, with moderate demand. American Pig No. 1, $41@43; No. 2, $37@40. In the retail trade Wm. Outhout reports great dulness. No sale. Swords, 155@165; common, $92½@97½; refined, $102½@107½; band, $135; rods, 3-16 to ⅝, $107½@167½; horseshoe, $130; ovals ⅜ to 1¼, 130@170; nail rods, 9@10¼c; hoop, ⅝ to 2, $140@195; scroll, $135@182½.

Lead.—Quiet. Selling at 9¼@9½c.

Tin—Very quiet; 32@31¾c.

Spelter.—Very quiet, at 9¼@9½c.

Petroleum is dull. We quote at 10c in bulk for crude, and 16c in bbls for do; refined in bond at 25½c for standard white, and 26c for prime white.

Quicksilver.—There is no alteration to note, whether in respect to demand or prices. Quotable at 60c ₱ lb, both for export and local consumption.

THE SLATE TRADE.

We notice no change of importance this week. There is a moderate demand for all kinds of Slate at about prices quoted below.

Roofing Slate.

Vermont purple,	1st	quality, per	square	$11 00@12 00
" "	2d	"	"	10 00@11 00
" green,	1st	"	"	11 50@12 50
" "	2d	"	"	10 50@11 50
" red,	1st	"	"	12 50@13 50
" "	2d	"	"	11 50@12 50
Pa. blk & d'k blue,	1st	"	"	10 50@11 50
" "	2d	"	"	9 50@10 50

PRICES DELIVERED. PER SQUARE.

CHICAGO.—Vermont purple and green, 1st qual....$14 00@15 00
" " " " 2d " .... 13 00@14 00
" " red " 1st " .... 15 00@16 00
" " " " 2d " .... 14 00@15 00
" Penn. black " 1st " .... 15 50@16 50
" " " 2d " .... 14 50@15 50

BUFFALO.—$2 or $3 lower than Chicago.
CLEVELAND.—$1 higher than Buffalo.
CINCINNATI.—50 cents higher than Cleveland.
NEW ORLEANS.—$19@20 per square.
CHARLESTON, S. C.—$15@16 per square.

THE COAL TRADE.

NEW YORK, June 7, 1867.

Shipments from the Coal Regions still show a decrease in the Schuylkill Coals, while the Lehigh, Scranton, and Pittston indicate a heavy increase over last season. While dealers in this city complain of dull trade, all the coal (which, as our table shows, is no small quantity,) coming to this market finds a ready sale, but at unprofitable prices. At the present exorbitant freights charged by the Philadelphia & Reading Railroad, and high cost of mining, the Schuylkill coals are debarred a market here, and in fact in Philadelphia and our Eastern ports. We are in favor of cheap coal, for it should have the effect of lessening the price of those articles of manufacture dependent upon it, as a motive power. Notwithstanding coal has declined 50 per cent. during the past year, these manufactures are still held at the "war prices," the manufacturers gaining the extra profit, and the loss falling upon the hard-working miner. Could our miners procure the necessaries of life at a cheaper rate (which this decline in the cost of production should produce,) they would submit to some reduction in their pay. Would the carrying companies demand but a fair (and not extortionate) rate of transportation, the trade could be made profitable without taking a loaf of bread from the miner's family. These matters must and will regulate themselves in course of time, and we trust that time is not far distant, when any one section of our community shall be beggared by a monopoly of this class. We understand that there is a meeting to be held in Pottsville this evening to take measures of redress. Our faith is much shaken in these good people, and we fear its objects, as has been the case with many similar meetings of this class, will be neglected and finally sink in the oblivion of a committee. The operatives of Schuylkill county have had an open opertunity to redress their wrongs during the past year in the granting to them of a most liberal chance to construct the "Consumers and Manufacturers Railroad," but they lacked energy and perseverance sufficient to carry the enterprise through. Thus we have little compassion for these grumblers, and cannot sympathise with them until we see some effort to assist themselves and take advantage of opportunities offered. We shall see the result of this meeting.

Trains will commence running regularly over the new road of the Lehigh Valley Company on Monday, the 17th inst.

The damage done to the Delaware Division canal by the late flood has been repaired, and water was again let into the canal on Saturday last.

We learn that the Lehigh & Susquehanna Railroad will make an excursion over the extension of their road to Scranton and Carbondale on the 10th inst. The completion of this extension gives them a continuous line of rail from Mauch Chunk to Carbondale.

The quantity of coal shipped over the Schuylkill Canal for this week was 28,388 17 tons.

The following is the quantity of Coal shipped over the principal roads for the week ending June 7, 1867:

	1866.		1867.		
	WEEK.	TOTAL.	WEEK.	TOTAL.	DECR'SE
Phil. & Reading R.R.	92,107	1,457,700	88,467	1,252,580	205,120
Schuylkill Canal	40,597	319,087	31,484	262,343	773.44
Lehigh Val. R. R.	23,503	724,964	46,396	757,559	32,595
Lehigh Canal	26,796	220,716	25,582	161,706	59,010
Del & Hudson	44,400	353,070	38,308	355,433	2,363
Scranton North	9,850	158,645	9,964	153,644	5,001
Scranton South	22,350	409,884	27,077	521,050	111166
Penn'a. Coal Co. Rail	.....	100,719	19,759	280,131	179412
" " Canal	1,302	5,509	1,297	4,918	591
Wyoming North	.....	.....	.....	.....	.....
Wyoming South	.....	71,263	.....	25,301	45,962
Shamokin	.....	197,726	12,389	172,482	25,243
Trevorton	.....	18,679	2,936	13,484	5,195
Short Mountain	3,152	23,655	1,913	14,289	19,366
L. V. Co	2,581	17,848	1,194	18,031	183
Broad Top	.....	106,884	5,582	96,936	9,948
Williamsport	1,524	1,085	2,845	26,186	20,083
Total	.....	4,193,034	300,243	4,096,073	.....
1867	.....	4,096,073	.....	.....	.....
Decrease	.....	96,961	.....	.....	.....

Lehigh Coal Trade.

SHIPPED FOR THE WEEK ENDING JUNE 1, 1867.

SHIPPERS.	CANAL. Week. Tons.	CANAL. Total. Tons.	RAILROAD. Week. Tons.	RAILROAD. Total Tons.
FROM MAUCH CHUNK.				
Lehigh Coal & Navigation Co.	.....	.....	.....	.....
Summit Mines	8,352	45,828	.....	.....
Room Run Mines	61	1,091	....	.....
Other Shippers	.....	.....	.....	.....
Total	8,597	46,920	.....	.....
FROM B. M. REGION.				
John Connery	.....	.....	53	1,444
W. T. Carter & Co.				
(Colerain e)	175	344	1,343	36,949
Spring Mountain Coal Co	183	381	3,341	51,224
Thomas Hunt & Co				
(N. Y. & Lehigh Co)	585	1,723	1,889	39,467
Honey Brook Coal Co	647	3,548	3,864	54,640
German Pennsylvania Coal Co	287	2,157	592	14,765
Beaver Meadow (D. W.)	....	....	66	403
Other Shippers	....	....	....	53
Total	1,878	8,243	11,280	198,947
FROM MAHANOY REGION.				
McNeal Coal and Iron Co	98	729	1,929	39,846
Knickerbocker Anthr. Coal Co.	90	729	979	24,074
North Mahany Mines				
(Mahanoy Col. now B. & C.	65	324	879	8,357
Delano do	87	182	1,122	26,777
Primrose Mines				
(Rathbun, Stearns & Co.)	....	....	1,172	19,289
Walter, Brothers & Co.				
(now Bedford & Cox)	81	81	....	....
Mount Etna Coal Co	....	....	....	58
Trevorton Coal Co	....	30	....	874
Glendon Coal Co.				
(Glendon Colliery)	....	....	113	10,318
Thomas Coal Co	....	192	842	9,920
Williams & Herring	....	93	411	6 148
E. S. Silliman	....	....	2 081	46 152
East Boston	....	....	....	505
New Boston Coal Co	....	....	....	4,259
Other Shippers	....	....	99	99
Total	420	2 433	9,536	196 629
FROM HAZLETON REGION.				
A. Pardee & Co.				
(Hazleton)	1 666	14.749	3,831	36 020
G. B. Markle & Co.				
(Jeddo)	1,379	11,238	4 124	37,472
Wm. S. Halsey & Co.				
(Mt. Pleasant)	381	967	123	1 220
Buck Mountain Coal Co	1,035	10,394	642	14,877
Sharpe, Weiss & Co.				
(Council Ridge)	729	7,037	1,869	26,241
Coxe, Brothers & Co.				
(Cross Creek)	355	1,742	422	6,102
Ebervale Coal Co	1,257	7,595	2,755	17 544
Stout Coal Co	845	4 941	1 277	9,477
Harleigh Coal Co	186	2,743	1,479	8,901
Ashburton Coal Co	....	....	....	37
East Sugar Loaf	....	....	3,193	34,778
Wordside	....	....	....	....
Highland	247	247	894	1,712
Mount Hall	....	....	151	284
Other Shippers	....	....	....	19
Total	8,114	61,456	20 212	194,770
FROM WYOMING REGION.				
Newport Coal Co	....	1,772	....	606
Warrior Run Mining Co	96	1,443	255	4,893
Parish & Thomas	179	1,669	584	10,278
New Jersey Coal Co	....	1,258	288	8,261
Lehigh & Susquehanna Coal Co.	198	1,602	388	10 396
Germania Coal Co	93	1,761	116	8,020
Franklin Coal Co	99	1,313	2	7,682
Auburried Impr'v't & Coal Co	....	1,434	307	3,510
Wilkes Barre Coal and Iron Co.	2,456	16 051	806	36,826
Baltimore Coal Co	507	4,134	533	22,851
Union Coal Co	282	3,410	....	6,964
Wyoming Coal & Transp'n Co.	91	2,960	499	12,853
Everhart Coal Co	96	849	511	1,302
Morris & Essex Mutual	....	....	....	3,651
H. B. Hillman & Co	....	....	368	5,779
Hawley, Price & Co	....	....	....	1,745
T. F. Hunt & Co	....	....	....	774
U. Lehigh Coal Co	467	1,499	....	11,934
Other Shippers	....	2,127	....	....
Total	4,764	42,676	5,357	167,212
Grand Total	23,582	161,706	46,398	757,559
Corresponding time 1866	26,796	220,716	25,563	724,964
Increase	....	....	22,863	32,595
Decrease	3,213	59,010	....	....

RECAPITULATION.

RAILROAD.

	From Coal Fields East by Rail from Mauch Chunk	From Coal Fields West by Rail from Penn'a.	From coal fields at Mauch Chunk and on line of road, also Penn'a.	Total by Rail	Delivered at Mauch Chunk Junction and Mauch Chunk for Canal	Total by Railroad and Canal
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
For the week	46,396	....	46 396	2,497	48 894	
Cor. w'k last year	23,503	....	23,503	9,845	33,349	
Prev'usly this y'r	711 162	441	711,604	10,017	721,622	
Total	757,558	441	758 000	12 515	770,516	
Same time last y'r	724,964	395	725 359	61 648	787,008	
Increase	32 594	46	32,640	....	....	
Decrease	....	....	....	49,132	16,491	

CANAL.

	Week.	Season.
Total from Mauch Chunk	8 397	46.920
" B. M. Region	1,877	8,243
" From Mahanoy Region	429	2,435
" Hazleton Region	8 114	61 456
" Wyoming Region	4,763	42,640
Total	23,582	161 706
Same time last year	26,796	220,716
Increase	....	....
Decrease	3,213	59,010

Lehigh and Mahanoy Coal Trade,

For week ending June 1, 1867.

NAMES OF SHIPPERS.	WEEK	TOTAL.
Trenton Coal Co.	.....	967 05
Mount Etna	.....	43 04
Mahanoy Coal Co.	958 18	8 428 06
Delano Colliery	1.211 03	27.006 17
Glendon Coal Co.	113 18	10,237 00
Rathburn, Stearns & Co.	1.167 02	19,092 13
E. S. Silliman	2,081 07	46,140 14
McNeal Coal & Iron Co.	2.372 07	40.608 09
Knickerbocker Coal Co.	1.074 18	25,005 05
Thomas Coal Co.	786 12	9,977 10
Williams & Herring	411 15	6,228 00
New Boston	.....	4,239 16
Other shippers	.....	10 02
Total	10.178 03	198,285 01
Corresponding week last year	10.218 17	132 965 11
Increase	.....	65,319 10
Decrease	40 17	.....

Schuylkill Coal Trade.

BY RAILROAD & CANAL, FOR WEEK ENDING JUNE 7, 1867.

	Railroad.	Canal.
St. Clair	....	.....
Port Carbon	....	.....
Pottsville	....	.....
Schuylkill Haven	....	.....
Auburn	....	.....
Port Clinton	....	.....
Total for week	....	28,388
Previously this year	....	262,343
Total	....	290,731

Cumberland Coal Trade.

For the week ending June 5, 1867.

(From the Alleganian.)

TRADE ON THE CANAL.—There were despatched from the port of Cumberland, during the last week, 63 boats, laden with 6 765 09 tons of coal, forwarded by the following companies:

	Tons.
American Coal Co.	1,733 00
Borden	671 13
Central	1,323 01
Hampshire	328 18
Cumberland Coal and I. Co.	2.049 03
Consolidation	657 12
Total	6.765 09

COAL TRADE BY RAILROAD.—Statement of Coal shipments over the Baltimore and Ohio Railroad for the week ending June 1, 1867:

From C. and P. R. R.	Tons.
Consolidation	1.359 03
American Company	113 17
From Eckart R. R.	
C. C. and I. C.	142 05
Spruce Hill	58 15
Blaen Avon	227 06
Total	1,901 06

GAS COAL	Tons.
From mines West of Piedmont	2,910 00
From George's Creek via Piedmont.	Tons.
George's C. & I. Company	1,434 03
Central do	1329 14
Atlantic do	451 04
Piedmont do	436 02
Swanton do	786 01
Barton do	828 03
Potomac do	279 04
George's C M do	481 14
Franklin do	1.162 01
Hampshire do	1.582 09
Consolidation do	1 934 01
Total	10,705 01

Coal transported over the Cumberland & Pennsylvania Railroad during the week ending May 25th, and for the year:

	To Canal.	To. B. & O. R.
For week	12,372 03	10,214 15
For year	80,049 18	191,818 01

During the corresponding period of 1866, there were delivered to the Baltimore & Ohio 165,020 14 tons, and to the canal 47,624 tons 7 cwt.

Prices of Coal by the Cargo.

[CORRECTED WEEKLY.]

At New York, June 7, 1867.

Schuylkill Red Ash, choice	$6 00@$6 25
" Ordinary	5 50 6 00
" White Ash Lump	5 50 5 75
" Steamboat	5 50 5 75
" Broken	5 50 5 75
" Egg	5 50 5 75
" Stove	5 50 5 75
" Chestnut	4 50 4 75
Lehigh White Ash Lump	5 75 ...
" Broken	5 50 ....
" Egg	5 50 ....
" Stove	5 75 ....
" Chestnut	5 00 ...
Wilkesbarre Lump	5 25 ....
" Broken & Egg	5 50 ....
" Stove	5 75 ....
" Chestnut	5 25 ....
Wyoming Lump	5 00 ....
" Steamboat	5 25 ....
" Stove	5 50 ....
" Chestnut	4 75 ....
SPECIAL COALS.	
Diamond Vein Red Ash, Schuylkill	6 25 ....
Locust Dale White Ash, "	5 75 ....
Honey Brook " " Lehigh	5 75 ....
Sugar Loaf " " "	5 75 ....
Room Run " " "	5 75 ....
Harleigh " " "	5 75 ....
Spring Mountain " "	5 75 ....
Sugar Creek " " "	5 75 ....
Silver Brook, Schuylkill	5 75 ....
Fulton White Ash	5 75 ....
Stout	5 75 ....
Buck Ridge " " Shamokin	6 00 ....
Spohn & Lewis	6 50 ....
Shenandoah	5 50 ....
Swatara Falls, Red Ash	5 75 ....
Henry Heils, E. Franklin, Lorberry	6 00 ....
New England Red Ash	5 75 ....
Broad Mountain	5 50 ....
Wyoming	5 40 ....
McNeal Co.	5 75 ....
George's Creek (Balt.)	5 25 ....
" (Georgetown)	5 00 ....
Locust Mountain (Reppler)	5 75 ....
Duncan Red Ash "	6 50 ....
Wilkesbarre Coal & Iron Co.	5 50 ....
New Burgh Orrell Gas Coal	9 50 ....
Despard Gas Coal	9 50 ....

Agents for theseCoals may be found in our advertising columns.

At Philadelphia, June 7, 1867.

Lehigh Lump and Steamboat	$5 25@ 5 50
" Broken and Egg	5 25 5 50
" Stove	5 25 5 50
" Chestnut	4 25 .. ..
Schuylkill Red Ash Prepared	4 75 5 00
" Chestnut	3 50 .. ..
" White Ash Lump and Steamboat	4 25 .. ..
" Broken	4 25 .. ..
" Egg and Stove	4 25 4 50
" Chestnut	3 50 3 75
Locust Mt. Lump, and Steamboat	4 25 .. ..
" Broken	4 25 .. ..
" Prepared	4 25 .. ..
" Chestnut	3 75 .. ..
Lorberry Coal	4 50 ..
Shamokin	5 00 .. ..
Franklin, (Lykens Valley)	5 00 .. ..
Broad Top	5 00 5 25

Scranton Coal at Elizabethport, June 6, 1867.

Lump	$5 00@— —
Steamer	5 00 — —
Grate	5 00 — —
Egg	4 75 — —
Stove	5 50 — —
Chestnut	4 50 — —

Prices for Pittston Coal at Newburgh, June 6, 1867.

Lump, per ton of 2240 lbs	$5 05 .. ..
Steamer, " " "	5 15 .. ..
Grate " " "	5 15 .. ..
Egg " " "	5 15 .. ..
Stove " "	5 30 .. ..
Chestnut "	4 25 .. ..

70 cents additional to New York.

Lackawanna at Rondout, June 6, 1867.

(Average contract prices for year.)

Lump	5 00 @.. ..
Steamer	5 10 @.. ..
Grate	5 30 @.. ..
Egg	5 40 @.. ..
Stove	5 55 @.. ..
Chestnut	4 60 @.. ..
Pea	4 00 @.. ..

Lehigh Coal at Elizabethport, June 6, 1867.

Lump	5 75@.. ..
Steamboat and Broken	5 50 — —
Egg	5 50 — —
Chestnut	5 00 — —
Stove	5 75 — —

At Baltimore, June 5, 1867.

Wilkesbarre & Pittston W A	$6 25@$6 50
Lykens Valley & Sunbury R A	6 50 6 75
Shamokin W. or R. A	5 50 6 00

George's Creek and Cumberland Coal.

Run of mine, f. o. b. at Locust Point at Georgetown $5 00@ 5 25

Wilkesbarre Coal at Elizabethport, June 6, 1867.

Lump	5 00 .. ..
Steamer	5 25 .. ..
Broken	5 35 .. ..
Egg	5 25 .. ..
Stove	5 50 .. ..
Chestnut	4 75 .. ..

Prices of Provincial Coals.

Duty $1.25 per ton.

Block House (on board)	$2 00 gold
Gowrie "	1 75 "
Lingan "	1 75 "
Sidney "	2 25 "
Pictou "	2 25 "
Glace Bay "	1 87½ "
International Co.'s "	1 75 "
Slack Coal "	.....75@1 00 "

Prices of Foreign Coals.

Duty $1.25 per ton.

Liverpool Gas Caking	$10 50
" " Cannel	13 00
" House "	16 00
" " Orrel	16 00

Per ton 2240 lbs.

PRICES FROM YARD:

Liverpool Orrell, screened	18 00
" Cannel, "	20 00

per ton 2000 lbs. delivered.

Coal Freights.

(Corrected Weekly.)

From Newburgh.

RIVER.	Co.'s BOATS.	EASTERN.
Albany	50@	Boston 1 80@.. ..
Barrytown	35	Bridgeport 1 12½.. ..
Catskill	35	Bristol 1 50 .. ..
Cobl Spring	30	Dighton 1 50 .. ..
Coeymans	45	Fall River 1 45 .. ..
Coxsackie	40	Mystic 1 50 .. ..
Fishkill Landing	20	New Haven 1 12½.. ..
Greenbush	50	New London 1 30 .. ..
Haverstraw	45	Newport 1 45 .. ..
Hudson	35	Norwalk 1 12½.. ..
New York	70	Norwich 1 40 .. ..
Nyack	50	Pawtucket 1 65 .. ..
Peekskill	40	Providence 1 50 .. ..
Poughkeepsie	25	Stamford 1 12½.. ..
Rhinebeck	30	Stonington 1 30 .. ..
Saugerties	35	Warren 1 45 .. ..
Sing Sing	50	
Stuyvesant	40	
Tarrytown	50	
Troy	55	
West Point	30	
West Troy	55	
Yonkers	55	

From Georgetown or Alexandria.

To Philadelphia	$1 50	— —	Boston 2 75 3 00
New York	2 25	— —	Sound Ports 2 75 2 90

From Port Richmond, Philadelphia.

Boston	2 00	— —	New London 1 85 — —
" bridges	03	— —	New Bedford 2 00 — —
Bridgeport	1 75	— —	Newport 2 00 — —
Bridgeport	1 75	— —	New Haven 1 75 — —
Bristol	1 90	— —	Newberryport 2 25 — —
Belfast	2 25	— —	Nantucket 2 25 — —
Braintree	2 75	— —	Portsmouth 2 25 2 50
Beverly	2 50	— —	Portland 2 25 — —
Bangor	2 00	— —	Pawtucket and tow 2 00 — —
Charlestown	2 00	— —	Providence 1 80 1 85
Chelsea	2 25	— —	Quincy 2 35 — —
Cambridgeport	2 50	2 75	Roxbury 2 50 — —
Cambridge	2 00	— —	Saco 2 50 — —
" bridges	03	— —	Salem 2 00 — —
Dighton	1 90	— —	Salisbury 2 50 — —
Dorchester Point	2 50	— —	Savannah 2 00 — —
Daversport & dis	2 00	— —	Washington 1 15 — —
East Cambridge	2 35	— —	Weymouth and tow and pilotage 2 00 — —
Fall River	1 85	— —	Wickford, R. I. 2 00 — —
Gardner	2 75	2 75	St. Jonh, N. B. 1 50 in gold
Gloucester	2 50	— —	Quebec 1 25 "
Hingham and dis	2 00	— —	Duby 2 35 — —
Lynn and dis	2 25	— —	Ipswich 2 50 — —
Milton	2 50	— —	Taomaston, Me. 2 00 — —
Malden	2 80	— —	Biddeford 2 50 — —
Marblehead	2 00	— —	Hallowell, Me. 2 60 — —
Medford	2 50	— —	Rockland 2 50 — —
New York	1 30	— —	
Norwich & tow	2 00	— —	

From Elizabethport.

Albany	$1 00@	— —	New London 1 25@— —
Boston	1 75	1 85	Newport 1 50 — —
Bridgeport	1 00	— —	New York 55 60
Fall River	1 40	— —	Norwalk 1 00 — —
Hartford	1 50	— —	Norwich 1 30 — —
Hudson	1 00	— —	Pawtucket 1 65 — —
Lynn	—	— —	Portland 1 95 — —
Middletown	1 25	— —	Portsmouth 2 15 — —
New Bedford	1 40	— —	Providence 1 40 — —
Newburyport	2 10	— —	Salem 2 00 — —
New Haven	1 00	— —	Taunton 1 40 — —

From Baltimore.

To Philadelphia	$1 40@	1 50	Boston 2 75@ 3 00
New York	2 25	— —	Sound Ports 2 75@ 2 90

Provincial Freights.

	Currency.
Sydney to N. Y.	$3 50
Lingan	4 00
Cow Bay	4 00
Big Glace Bay	4 25
Little "	3 £0

Foreign Freights.

New Castle and Ports on Tyne	£18@ keel.
Liverpool	11s.@ 12s.

BOSTON STOCK MARKET.

(By Telegraph.)

BOSTON, June 6, 1867

Prices bid to-day were as follows:

Canada	—	Minnesota	—
Copper Falls	24½	Quincy	22
Franklin	13¾	Cary Improvement	7⅞
Hancock	7	Rockland	—
Huron	4	Water Power	22¾
Isle Royal	—	Central	—

Sales at Boston Stock Exchange, June 6.

500 shs Water P'r	24½	250 shs Huron	5
100 do do	s.30 24⅜	100 do do	4⅞
180 do do	24⅜	50 do do	s.30 4⅞
150 do Cary Imp	8¾	300 do Native	13⅜
100 do do	8⅞	100 do do	b.20 13⅜
55 do Allouez	87⅛	100 do Petherick	13⅜
100 do do	b.30 9	300 do do	13⅜
100 do do	b.30 9½	10 do do	13⅜
200 do Bay State	b.30 5	50 do Rockland	8¾
100 do do	b.30 5½	50 do St. Clair	4
25 do do	4¾	50 do do	4¼
50 do do	4½	SECOND CALL.	
13 do do	4½	100 do Cary Imp	8
110 do Cop. Falls	26	100 do Water P'r	23½
100 do do	b.30 26¾	250 do do	23¾
50 do do	25¾	100 do Cop. Falls	25½
50 do do	26	125 do Hancock	7½
50 do do	b.30 26¾	50 do do	7⅝
110 do Franklin	14	100 do do	b.60 7¾
125 do Hancock	7½		

FOREIGN MARKET REVIEW.

Metal Report.

LONDON, E. C., May 10, 1867.

We are glad to be able to report an improvement in most branches really brisk; but there are indications of a steady demand for metals, at present prices.

IRON.—The position of Welsh and Staffordshire iron remains the same. Orders of moderate extent are coming in. Scotch pig iron has advanced to 55s. 6d. cash buyers.

COPPER.—The market has been much firmer, particularly for Australian copper, for which higher prices have been paid. Burra, £85 to £86; for Wallaroo, £83 is paid. English manufactured is also in better demand; raw sells also at higher prices.

TIN.—Sales of Straits have been made at £84 to £85, according to quality and shape, and prompt. Several parcels to arrive have also been done at £85 to £85 10s. Banca nominally $92. The Dutch market is quiet at 53½d. English Tin steady.

TIN-PLATES.—No change to report.

LEAD continues in steady demand at £20.

SPELTER dull. Business done on the spot at £20 15s. and £21, which is also the nearest price for forward delivery. Special markets in outports, £21.

VON DADELSZEN & NORTH.

Weekly Coal Trade Cirular.

NEW YORK, May 24, 1867.

The Coal Trade moves along quietly. The heavy decline at the last Scranton auction sale has checked buying—except to supply immediate wants—for the time being; yet it cannot be expected that coal can continue to rule so low for any length of time. Production is not yet up in quantity to the corresponding period of last year, and consumption, owing to the extremely low prices, must, and inevitably will, largely increase. The prudent buyer will, no doubt, take advantage of the present depression to replenish his stocks, and before the year closes, unless our judgment is very much at fault, be amply rewarded for his foresight. Prices are nominally unchanged, although trade moves along steadily and quietly.

P.

AMERICAN

Journal of Mining.

[ILLUSTRATED.]

WESTERN & COMPANY,

EDITORS AND PROPRIETORS.

By publishing contributions, the JOURNAL OF MINING *does not necessarily endorse the positions assumed by contributors.*

OFFICE, 37 PARK ROW, NEW YORK.

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1 45 " " 3 months.

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" " 30 " (quarter col.) .....18 "
" " 40 " a discount of .....25 "
" " 50 " " .....35 "
" " 60 " (half column) .....50 "

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NEW YORK, SATURDAY, JUNE 8.

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NEEDFUL REFORM—PROPOSED INTERNATIONAL SYSTEM OF WEIGHTS AND MEASURES.

With one exception, the system of weights and measures now used by the whole world are defective, and based on standards which at first arbitrarily selected, and never clearly defined, have led to much confusion, and have proved of great difficulty to the progress of science and of commerce. Were measures used merely to determine size, weight, and capacity for commercial or domestic purposes, it might be a matter of comparative unimportance that the standards of length were taken from portions of the human frame, or from "three barleycorns placed end to end, round and dry," or that "thirty-two grains of wheat, well dried, and gathered out of the middle of the ear," should be, as was enacted in 51, Henry III., the element of weight. In such cases, although these afforded variable and perishable standards, the result would not be so full of evil. But it is quite a different matter when we seek a scientific standard. That ought to be as perfectly accurate as human intelligence can form it. It will not do to accept as such the arm of a king, even though he be a monarch of Britain, and a Plantagenet, for where the measurement of billions of miles is concerned the variation of a small fraction of a hair's breadth would produce an important difference. Such variations must occur when the unit of measure is derived from a variable standard. Another objection to most systems is that the multiples and submultiples of their unit of measure are not arranged on any common ratio as in the decimal system. Our readers must have a vivid recollection of the trouble, loss of time, and discouragement which this entailed on them in their earlier life. These defects of systems of measures are principally local in their disadvantages, unless in the case of questions of science, which concern all. But the want of an international system, which would also improve local systems, is sorely felt by all countries. Reforms, have, during the past two hundred years, been called for, and even attempted, but with little success. A very extensive improvement is needed, which may, nevertheless, be made gradually. France, always amongst the first to assist in the development of any great work, organized, after the Universal Exposition of 1865, an International Association to obtain the establishment of common weights and measures, throughout Europe, at least, and, if possible, throughout the world. Its chief object was to introduce absolute uniformity in measures, &c., and all possible uniformity in coins. At the present time efforts are made for the same object. A committee of eminent scientific men will meet in Paris this month to discuss the principal questions connected with the introduction of international measures of space, capacity, length and money. These will, doubtless, be the determination of a common standard, and of the ratio of its multiples. The fineness of the gold standard, and the means of preventing its debasement will probably occupy a large share of attention. The members of the committee are men of the highest scientific and practical character, but it will require all this knowledge and ability to settle these questions.

All are agreed that a reform is necessary, and admit the advantage of an international system, but many doubt the possibility of its introduction. Great difficulties will be experienced in determining some of the details, but probably none will be so great as those arising from national jealousy. The French have introduced a system in which the metre, or one-millionth part of the quadrant is the standard—all the other measures being derived from this. This has merited the approbation of some of the most distinguished mathematicians of the world. It possesses all the characteristics of a good system. Its standard is a certain, easily determined and indestructible measure. It is not subject to the innumerable changes to which the English standard is liable. In addition to this, all the other measures are derived from it by the multiplication or division of one number. "Its minute, exact divisions," says the report of a Congressional committee recommending its use, "specially adapt it to the use of chemists and apothecaries, the finer operations of the artisan, and to all scientific objects." The metric system is undoubtedly excellent, and would, probably, be adopted at the Conference, were it not that Great Britain is opposed to it, on "scientific and practical grounds," probably similar to those which induced her to reject for so long a period the Gregorian Calendar. If she can offer any better system, which all may use, let her do so, but let her not place obstacles to the reform of what is, next to the diversity of language, the great difficulty of commerce. Such an opposition would be unworthy of a people whose fathers stipulated that there should be throughout the land but "one weight and one measure."

THE PROSPERITY OF CALIFORNIA—HOW TO EMPLOY ITS SUPERFLUOUS CAPITAL.

The San Fransisco *Mercantile Gazette* stated some time ago, that $18,000,000 were on deposit at the various banking institutions, saving, and loan societies, in that city, on Feb. 1, and it estimated the bankers' capital to be about $15,000,000 more. During the month of March the seventeen banks of deposit had $8,551,589 on deposit, and the various saving and loan societies had more than $11,000,000 besides special deposits and their own capital. In fact, money was so plentiful, that large sums could be borrowed at ten per cent. per annum. These figures speak volumes for the prosperity of California, and clearly indicate what it will be in a few years if proper steps are taken to afford safe means of investment for this large capital. That money is power. It will enable the Golden State to make wonderful exertions. It will give San Francisco the means of rapidly attaining the undisputed supremacy of the Pacific, to which she is undoubtedly entitled by her position. It will, however, be of little use, either to the country or to the depositors, if it is allowed to remain locked up in the safes of banking companies. That it may be productive of the greatest amount of good, it ought to be invested. If it is turned into muscle and mind by assisting immigrants from Europe, or our own citizens in the more thickly populated cities of the Eastern States, to migrate to California, what returns may not be expected? If additional manufactures were started there, an immense market would be found in the adjacent territories, in the countries of South America and of Eastern Asia. Even the British Colonies of New South Wales, Victoria, and Brisbane, in Australia, and those in the Island of New Zealand would find it much cheaper and expeditious to bring goods from San Francisco than from Birmingham or Manchester. In addition to manufactures, another field for the employment of the capital of California is to be found in her vast mineral treasures. The fame of these is world-wide, and there can be few more valuable sources of wealth, than rich mines carefully managed. Their money, invested in railroads and canals, will also bring them in large returns. Few things are more necessary in a country of large resources than constant communication between its remotest points and its commercial capital, and railroads through California will be found to have an effect on its prosperity of the most remarkable kind. That State has made wonderful progress since the discovery of gold. Endowed with its resources and position, it is destined to make still greater advances, but it will much more readily attain that eminence in the country which it must ultimately reach, if its idle capital is carefully invested in inducing immigration in developing mines, in increasing the already numerous manufactures, and in building a network of canals, roads, and railways throughout its entire territory.

Scientific Meetings.

AMERICAN INSTITUTE—POLYTECHNIC BRANCH.

SCIENTIFIC ITEMS—RUBBER TUBING—A BUNSEN BURNER—CHIMOGENE A CONGEALER—WOODEN PAVEMENTS—LEAD POISONING—A WELL MERITED COMPLIMENT.

At the meeting of the Polytechnic on Thursday evening, the chairman, Prof. S. D. Tillman, amongst other items of scientific news, stated—I. A bis-

muth lode had lately been discovered in South Australia, which is said to be very rich; but being 200 miles in the interior, some difficulty has been encountered in transporting it to the seaboard. There was also considerable delay in smelting the ore, but a quantity of ingots arrived in England lately, and it is expected that shipments of this rare and valuable metal will hereafter be regularly made. II. Reichter, of Freiberg, exhibits in the Paris Exposition two perfectly pure ingots of the newly-extracted metal indium, weighing about 500 grammes, and worth about 18,000 francs. III. Lately Dr. Squire informed the London Chemical Society that five tons of glycerin, which he had imported during the severe weather, had been frozen. No known crystalline substance was found in it, and after it had been liquefied, it was found impossible to again solidify it, even by intense chemical cold. To ascertain whether vibrations had any effect in producing this phenomenon, portions of the liquefied glycerin had been sent to Edinburgh from London, by rail, during the late frosts. In reference to this note, Dr. Van Der Weyde stated that it was a mistake to believe that crystallization was produced by vibrations, and that the glycerine in question must have been adulterated with glucose. He had frozen glycerine by means of the evaporation of carbonic acid, producing thereby a degree of cold 100° below zero of Fahrenheit.

Dr. Rowell exhibited on behalf of Mr. W. B. S. Taylor, specimens of improved rubber tubing for gas pipes. It consists of an inner and outer tube, between which is placed an interlining composed of glue and glycerine, which forms a *rete mucosum*, preventing the absorption of gas which occurs in the ordinary vulcanized rubber piping. He also exhibited a new Bunsen burner of his own construction, in which there are four separate tubes, so arranged that the formation of the explosive mixture is prevented.

Mr. Fisher explained an apparent discrepancy between a statement of his that it costs ten cents a railway sleeper with creosote, and that of Dr. Feuchtwanger, that it costs ninety. He spoke of impregnation by means of vapor. Dr. Feuchtwanger alluded to the process of treatment by steeping.

Dr. Van Der Weyde made some remarks on the chemical composition of petroleum and the substances derived from it. The analysis of petroleum is not unlike that of water. That it should be satisfactory the petroleum must be taken from a pure source, for it is affected by the presence of different substances, such as oxygen, hydrogen, arsenic, just as the water taken from mineral springs is impregnated with iron, sulphur, &c. He then gave the proportion in which all the petroloids—if we may use the term—contain their constituents, carbon and hydrogen. He showed how chimogene, a new substance which he has formed by condensing the gas escaping from petroleum distillations, might be used to produce ice. Placing some test tubes containing water, in a glass with a little chimogene, he caused this latter to evaporate by exhausting the air, and the water was immediately changed into ice. He has constructed a machine for making ice on this principle, on a large scale. It is like the boiler of a locomotive, the water being frozen in the pipes. It is a singular fact that ice may be made at a cheaper rate by ammonia, than it can be collected from the lakes. As chimogene is much cheaper than ammonia, there must be consequently less cost in producing ice by its use.

Mr. Maynard exhibited a model of a new wooden block for pavements. Its chief peculiarity was that there were a number of insterstices which could be filled with gravel and pitch.

At a late meeting of the Institute, some members questioned the opinion that lead piping is poisonous. To prove that it was so, Messrs. Reed and Parmelee purchased one hundred and twenty feet of new lead piping, filled it with water at eight o'clock on Wednesday evening, sealed it, and then gave it in charge to the officers of the Institute. The water having been about twenty-six hours in the pipe, was then tested in presence of the members, and showed evident traces of lead being held in solution.

As this was the last meeting until September, Mr. Maynard, in a few appropriate sentences, paid a well deserved tribute to the exertions of the chairman, Prof. S. D. Tillman, to further the interests of the Polytechnic, and he moved that the thanks of the Institute be tendered to Prof. Tillman for the ability and dignified manner in which he presided at their discussions. The motion was carried by applause.

GERMAN POLYTECHNIC ASSOCIATION.

ATMOSPHERIC RAILROADS—THE LONDON ATMOSPHERIC RAILROADS.

The German Polytechnic Association held its regular weekly meeting on Friday, May 31st, 1867—the President, W. Hauff, Esq., being chairman.

Mr. Gross read a paper on atmospheric railroads, mentioning especially those now in use in London, which have, after a trial of six years, proved to answer the purpose in every respect. They consist generally of cast-iron pipes, which are connected by flanges and lead-packing; they are usually laid below the street level, and contain a track on which the trucks run. The latter are furnished with a rubber packing at each end. At one end of the route the pipe is connected with a ventilator, which can be used to compress the air, as well as to extract it. It has been ascertained by experiments that a body in a vacuum can be propelled at a rate of 700 miles an hour under the atmospheric pressure. The trucks of the London Atmospheric Railroad, the pipes of which are 33 inches in diameter, run 25 to 30 miles an hour, at a pressure of 2½ ounces per square inch; however, there are no inclinations to be overcome. The trucks are loaded with one ton in weight, and run through curves of forty feet radius easily. The rubber packing need not fit very closely to the pipes, because the trucks move at a high speed, the pressure being at the same time a comparatively low one, so that the waste is not important. The least difference in the pressure behind and before the truck when the ventilator commences to work will start the truck. The chief advantages of the atmospheric railroad are: The certainty and velocity of the despatch, a complete independence from the influence of the weather, lightness and cheapness of construction, inasmuch as all expensive structures used in common railroad building are omitted. The disadvantages are the following:—The repairs are rendered very difficult, because the place of damage can not be found out very easily. The application of intermediate stations is also rendered difficult. The London despatch routes are all short, being not over half a mile long each. They are used especially for the expressage of letters and packages; however, passengers have been transferred also by means of the pneumatic dispatch. The atmospheric railroad under the Thames river consists of a wrought iron pipe, lined with bricks inside and outside. The inside diameter of the pipe is twelve feet nine inches. The cars used on this road are common railroad cars, which are furnished with a brush packing. At the intermediate stations there is a lever mechanism, which comes into contact with the car when it is going to stop; it opens a door which equalizes the pressure; besides, the track is laid on an incline, which brings the cars to a stop without the aid of a brake.

Several proposals have been made in New York for the despatch of letters by means of a pneumatic railroad, especially connecting the distant parts of the city. A very ingenious arrangement in connection with the letter-boxes on the lamp-posts was mentioned, by means of which the trucks, on their way to the main post-office, empty the letter-boxes automatically.

Mr. H. Muller, recently returned from Paris, gave an account of the exhibition building and its surroundings, mentioning the arrangements of the separate departments and the most prominent objects contained in them.

Correspondence.

[To insure insertion of Correspondence in our columns the full name and address of the writer must be given.]

[For the Journal of Mining.]

Method of Controlling Colliery Explosions.

Electricity has frequently been suggested by Prof. Giraud, of Prague, and others, as a means of controlling the explosion of fire-damp in coal mines. An article on this subject has recently appeared in the *Berg und Hütten Zeitung* from Emile Somers, a chemist in Eden Koben. Mr. Somers proposes to conduct a wire, such as is used for telegraphic purposes, through all the galleries and levels of the mine, insulating it in the usual manner, and attaching the extremities to the poles of a powerful electric machine, or Rhumkorff inductive coil. The wire to be made up of a number of short pieces so arranged as to leave a slight break between their extreme points. Before the men descend in the morning the wire is connected and a current allowed to circulate for several minutes. Sparks will be given off as the stream passes from point to point, harmlessly exploding any fire-damp which may be present in the mine. The wire should be laid as high as possible, owing to the lightness of the gas. A good circulation of air will, however, be still necessary, and the resulting compounds of the explosion of the carburetted hydrogen—carbonic acid and water—must be removed.

Instead of intermittent wire, Somers further proposes connecting the points together by a fine wire, which would be brought to a red heat by the electric stream. This plan, based as it is on sound physical principles, and combining simplicity and cheapness, should entitle it to a thorough trial by those interested in coal mining.

Alexander Addison, C. E.

Clausthal am Harz, Prussia,
April 4, 1867.

STATEMENTS.

St. Joseph Lead Co., (of St Francois Co., Missouri.)

We have received the third annual report of the Trustees, including that of the Treasurer of this Company. It is a complete and concise review of its affairs for the year ending May 9, 1867, and shows it to be in a much improved condition. It appears that the Trustees, two years ago, found the property of the Company encumbered over $70,000, and with a floating debt of over $25,000. Their debts have been cancelled, and at the present time the total indebtedness of the Company is not over $3,000, principally owing at the mines. The Trustees state that the plan of working the mines has been to establish the Company on a firm and permanently paying basis. Instead of forcing a dividend to the stockholders, they have consulted their best and permanent interests, as they believe, by expending their net earnings in improvements. It is estimated that these improvements, (valued at $76,000,) exceeded a seven per cent. dividend on the whole capital stock, and are a sure guarantee of permanent success. None will doubt the soundness of this policy, and it is to be hoped that others will take the advice of the Journal of Mining, and try if it does not always pay best in the long run. During the year three reverberatory furnaces, workmen's houses, etc., have been built, agreeable to last year's statement; $47,073 95 have resulted from the sale of lead, and the fact of the abundance and richness of the lead deposits on the Company's property have been established.

MEETINGS.

Western Vermont Marble Company, at 191 Broadway, Room 7, June 13, 1 P.M.; Pennsylvania Coal Company, at Hawley, Pa., June 12, between 7 and 8 A.M.; California Petroleum Company, at 69 Liberty street, June 25, between 12 and 1 P.M.; Union Coal Company, at Wilkesbarre, Pa., June 18, between 1 and 2 P. M.; Union Petroleum Company, at 74 Broadway, Room 18, June 18; Dennis Run and New York Oil Company, at 25 Nassau street, June 12; Sterling City M. & T. Company, at 392 Pearl street, June 12; C. S. Blasting Oil Company, at 32 Pine street, June 11; Tannerdale Coal Company, at Continental Hotel, Philadelphia, June 11; North Carbondale Coal Company, at Philadelphia, June 10; Old Dominion Slate Company, at 218 Broadway, June 11; Huron Copper Bay Company, at Montreal, C. E., July 1; Gallatin Oil Company, 120 Exchange Place, Philadelphia, June 10, 4 P.M.; Hibernia Oil and Coal Company, at 431 Walnut street, Philadelphia, June 8, 3 P.M.; Chestnut Hill Iron Ore Company, at 327 Walnut street, Philadelphia, June 17, 12 M.; West Buck Mountain Coal and Iron Company, at 311 Walnut street, Philadelphia, June 25, 11 A.M.; Highland Copper Company, at 58 City Exchange, Boston, June 26, 2 P.M.; Annette S. M. Company, at 112 Broadway, June 13.

ASSESSMENTS.

Hancock Mining Company (of Lake Superior), $1 per share; South Pewabic Copper Company (of Lake Superior), at 11 'Change Avenue, Boston, $5 per share, payable June 20th, interest after; Bay State Mining Company, at 23 City Exchange, Boston, $1 per share, payable June 10, by stockholders of record of 3d inst.

DIVIDENDS.

Ocean Oil Company of Philadelphia, one and a-half per cent. on demand; Roaring Brook Coal Company, at 17 State street, Boston, $5 per share, payable June 7 to stockholders of record of June 5.

Patent Claims.

Interesting to Miners, Millmen, Metallurgists Oil-Men and Others.

The following claims have recently been issued from the United States Patent Office:

65,040.—Tank for Storage of Petroleum.—Peter Audrew, Cincinnati, Ohio:

I claim, 1st, The oil-tank, so constructed that the oil will rest on the surface of the water and be surrounded by water on its sides, as set forth, when said tank is arranged and combined for discharging into the lower reservoir in case of a fire, substantially as set forth.

2d, For the purpose of extinguishing fire and saving oil that may be on fire, I claim oil tanks situated in relation to each other as described, connected by pipes constructed and arranged in such a manner that the oil from the upper tanks may be conveyed to the lower ones, without danger of fire being communicated through these pipes from the upper to the lower tanks, should the oil be on fire at the time of its being transferred.

3d, The construction and arrangement of oil-tanks and pipes connecting these tanks, as described and specified for purposes specified.

65,064.—Rock Drill.—Daniel S. Early, Hummelstown, Pa.:

I claim, 1st, The drill-rod constructed with the fixed collar, K, and shoulder, L, in combination with the tappets, G, and slotted cross-head, H, substantially as described for the purpose specified.

2d, The tappets, G, with shoulders, g, and turned ends, h, arranged with the slotted cross-head, H, in combination with the drill-rod, I, having fixed collar, C, and a square shoulder, L, substantially as described for the purpose specified.

65,092.—Compound for Preventing Incrustation in Steam Boilers.—H. Frederick Knoderer, Sen., and L. F. Knoderer, Columbus, Ohio :

We claim the application of a compound or preparation of two parts of common alum and one part of common glue, prepared and applied as above specified to prevent and remove the accumulations and incrustations of steam boilers, and pipes and tubes belonging thereto, as hereinbefore described and substantially set forth.

65,021.—Sand Pump.—E. A. L. Roberts, Titusville, Pa.:

I claim, 1st. The combination, substantially as and for the purposes herein set forth and described, of a tube, piston, and foot-valve, the latter being opened for the purpose of discharging the contents of the pump by means of the stem, k, or its equivalent, whether attached to or separated from the valves.

2d, The perforations, s, as arranged in relation to said pump, for the purposes herein set forth.

65,122.—Process of Reducing and Refining Metallic Ores and Oxyds.—S. C. Salisbury, New York City :

I claim, 1st, The application and use in blast and like furnaces for reducing metallic oxyds of a blast of hydrogen and oxygen gases, or their equivalents, when heated to a temperature of from 700 deg. to 800 deg. Fahr., or thereabouts, for the purposes set forth.

2d, The use in such furnaces, in combination with such blast of hydrogen and oxygen gases, or their equivalents, heated as described, of carbon gas, when free from, or obtained from hydrocarbons free from sulphur, phosphorus, ammonia, etc., for the purposes set forth.

3d, The use in such furnaces of such blast of hydrogen and oxygen gases, or their equivalents, so heated as described, and of such carbon gas free from sulphur, phosphorus, ammonia, etc., in combination with the ordinary air-blast, for the purposes set forth.

4th, In combination with blast and other furnaces used for reducing ores, the use of a compound or divided tuyere, constructed substantially as described, for supplying to such furnaces such blasts of different character, substantially as and for the purposes set forth.

5th, The use in blast and other furnaces for reducing ores of manganese, substantially as and for the purpose set forth.

65,185.—Machine for Cutting Slate.—J. W. Durgin, assignor to E. Q. Norton and A. H. Norton, Bangor, Maine :

I claim the cutting of slate for roofing purposes, composed of a knife of a shape corresponding to that which it is designed to cut the slate and pivoted to the end of a bed-piece of a form corresponding to that of the knife, and of such dimensions that the knife may work over it with a lever or treadle applied to the knife, all arranged substantially in the manner as shown and described.

RE-ISSUE.

2,629.—Desulphurizing Coal and Ores.—Jacob J. Storer, Boston, Mass. Patented April 9, 1861 :

I claim, 1st, The process, substantially as described, of forcing into the interstices of coals containing sulphurous impurities by the pressure of steam and either dissolved in it or mechanically conveyed by it chemicals proper to neutralize the sulphurous impurities.

2d, The employment of salts of ammonia forced by pressure of steam into the interstices of coals, as and for the purpose described.

Special Scientific Brevities.

☞ Mr. J. Rofe writes to the "Geological Magazine," and shows that colliery proprietors have only to watch the barometer, and provide in accordance with its indications for the supply of air to the mines. Alluding to the well-known "Blowing-well" of Preston, in Lancashire, he states that some time since, in a well recently constructed by him as a cesspool to some chemical works, he observed the phenomena characterizing the "Blowing-well!" When the atmospheric pressure diminished, the air came from the well loaded to a disagreeable extent with the offensive vapor from the cesspool. On continuing his observations with a barometer, he found similar results. He concludes from these facts that a coal mine must be regarded as a gigantic well, from which, when the atmospheric pressure diminishes, the air expands and rushes out with great violence. This circumstance is not of itself dangerous, but if there be an excess of gas in the mine, and at the same time, from accident or carelessness, a means of ignition, then, indeed, the consequences are very likely to be serious. Hence the barometer becomes the miners safest guide.

☞ Numerous microscopes of great power are on exhibition at Paris Vachet, one of the most celebrated makers in Paris, exhibits a great variety. In the principal model the body of the instrument inclines on its axis; the adjustment of the focus is effected at first by a coarse rapid screw, then corrected by the micrometic screw; the platform, covered with blackened glass, possesses a convenient movement of rotation; the mirror, plain on one face, concave on the other, is articulated; there is a slide to receive the diaphragms, etc. The binocular microscope, constructed on new principles, gives stereoscopic images; by looking with both eyes at once, one obtains magnificent objects in relief. There is also a three-bodied microscope, destined for zoological studies, and adapted for the observations of fugitive objects by several persons at one time. M. Vachet also exhibits a series of eight lentiles for objectives, whose magnifying power varies from 25 to 1,500 diametres. The most powerful lentil is almost imperceptible.

☞ Agate when polished is sometimes seen to bear marking, which have a curious resemblance to a variety of natural objects such as trees, bushes and occasionally animals. These natural appearances, it seems, may be easily imitated artincially in various shades of color on common chalcedony. It is only necessary to draw the design on the polished stone, using a common goose quill, with a tolerably strong solution of nitrate of silver, and then drying it in direct sunlight. The drawing will at first be of a brownish color, but if it be dried and touched over two or three times it will be reddish. The same solution of nitrate of silver mixed with 12½ per cent. of soot and 12½ per cent. of bitartrate of potash will give a greyish brown color. A violet color may be obtained by mixing one part of alum with three parts of the silver solution. Gold dissolved in aqua regia, or a solution of chloride of gold, gives a light brown color.

☞ The *Progres de Lyons* contains a letter from a chemist of Marseilles, describing the efficacy of a new Greek Fire invented by him. Of it he says, "I declare, and I am ready to prove, that I can at a distance of 1,000 metres, envelop an army of 100,0000 men in a sea of flame within less than five minutes. If a town has to be taken by assault, I have no need of a rotopschine, as I can set it on fire in very nearly the same period." What the processs is is not told, but the *Mecanics' Magazine* asserts that it is not new, but was invented during the Crimean War, when a patent was applied for by Mr. Joan Macintosh. This patent was suppressed by Lord Panmure, who regarded the publication of the invention as prejudicial to her Majesty's service.

☞ Bessemar steel has been recommended for cooking utensils, as the material is not acted on by the various agents which attack copper. It has an advantage over cast iron, as the vessels can be made much thinner.

Mineral and other On-dits.

☞ It appears that the celebrated diamond mines of Golconda, in India, so far from being likely to give out—as has been reported—have as yet been only very imperfectly worked. An English officer in the Madras army, who has recently visited these mines—if mines they can be called—says they have hardly yet been worked at all; that most of the diamonds thus far obtained have been found near the surface—the richer sort lying deep in the bowels of the earth, and that the natives having no appliances for digging beyond a crowbar, seldom excavate below twenty feet in depth, though it is found that the deeper they go the larger and richer and more abundant the diamonds are found. Besides diamonds, other precious stones are turned out of these holes; as robies, garnets, opals, catseyes, moonstones, etc.

☞ We learn that a large and valuable deposit of sulphate of baryta has recently been discovered near Dunbeacon, county Cork, on the property of the Right Hon. the Earl of Bandon, and that a few laborers within the last fortnight have had bare upwards of 200 tons of baryta of the best quality, it being pure and free from any admixture of iron or other deleterious substances, which, owing to the cost and difficulty of separation, render the article of no commercial value. The pure baryta is extensively used in the manufacture of plate glass.

☞ A discovery of gold in North East, Duchess county, N. Y., has just been made. It is found in small particles in heavy bodies of rock. Some specimens have yielded at the rate of $120 pare gold to a ton. A shaft eight feet in depth has been sunk, and the operators are greatly encouraged by the developments.

☞ Mr. Shea reports the discovery of gold-bearing gravels in the river valleys of Central New Brunswick, and, judging from similar deposits in California, which have proved rich in gold, he believes that the New Brunswick beds may be worked at a profit.

☞ Coal of the light kind, such an Mount Diablo furnishes in California, has been found in parts of Nevada. An exchange states that a coal bed there would be worth more than a silver mine.

until 1856—has been gradual and continuous until 1865, when it was but 1,489,597 ounces. The value of all the gold claims in Australia is estimated at $42,494,620.

☞ California now exports ten thousand tons of copper per annum, which is five times as large as the produce of the whole United States only ten years ago.

☞ Rich and valuable specimens of lead, iron, and coal have been found in great abundance in Muhlenburg county, Ky.

☞ The gold production of Australia is said to be falling off. The decrease of production—which was 2,985,991 oz.

☞ West Virginia has a coal bed that extends over 40,000 acres, and is seven feet thick.

☞ Coal is now selling at retail at Elmira, for from $4 25 to $5 25 per ton.

All Sorts.

☞ An American newspaper, writing about the Calcutta and Delhi line, says that during last year seven or eight corpses were taken from the cars, victims of over-crowding. Men and women, it says, are so crushed and crammed into the third-class carriages as to be forced to remain standing for the whole length of a journey, reaching sometimes 400 or 500 miles, in the hottest season of the year. "We confess," it continues, "with proper national pride and exultation, that our managers have not reached that point yet. But we are a progressive people. Wait a year or two, and then see!"—*Engineer.*

☞ An irascible old gentleman was taken with sneezing in the cars lately. After sneezing in the most spasmodic manner eight times, he arrested the paroxysm for a moment, and extricating his handkerchief, he thus addressed his nasal organ, indignantly saying, "O, go on, go on—you'll blow your infernal brains out presently!"

☞ M. Du Chailu, who has spent ten years in exploring the interior of Africa, tells of a wonderfully smart polygamist there who throws Brigham Young completely into the shade. He has two hundred wives and six hundred children, all his own offsprings.

☞ The population of the United States is now 31,500,000. Great Britain has 30,000,000; France, 38,000,000; Prussia, and its dependencies, 35,000,000; Austria, 31,000,000; and Russia, 80,000,000.

☞ The grave chemist, Dumas, asserts in these later days that all plants and animals are only condensed air—are composed of air, and return after death to their original element.

☞ A hard-working eminently pious woman once said: "I don't want to go to heaven as soon as I die, but rather to sleep in the grave a thousand years or so, to get rested."

☞ It is calculated that it would require a column of gold five miles and 12-14 of a mile high and thirteen inches in diameter to cancel the national debt.

☞ According to M. Leverrier, a French astronomer, we shall have a shower of meteors next August, surpassing in brilliancy and extent those of last year.

☞ Peat charcoal is twenty per cent. more combustible than that of oak. It has been applied to softening steel plates and dies with remarkable success.

☞ It is said that Mr. Bessemer now enjoys from his patents for the conversion of iron into steel, the princely income of $500,000.

☞ Greeley says the man who pays more for shop rent than for advertising, don't know his business.

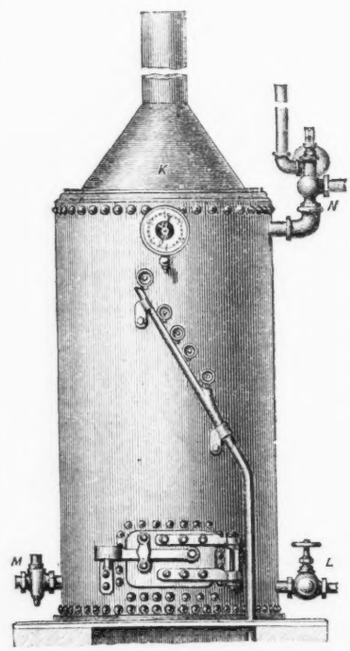
☞ Hanging in Montana is styled "climbing the pine limb," and in Nevada, "early rising."

West Virginia.

The Parkersburg *Gazette*, May 23, says: The oil business in this section of the country seems to have collapsed beyond all calculation; the effect of which is very seriously felt by the business community here.

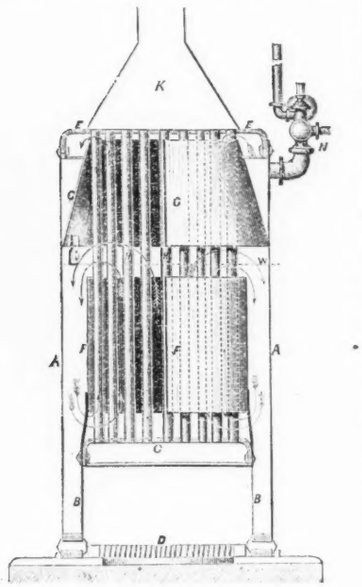
THE HICKS BOILER.

Had engineers, when constructing boilers, only to provide for the rapidity of the generation of steam, and its immediate passage into the steam space, nothing could be easier than to construct a boiler with a large surface and with small depth of water. Owing to the expense, the nature of the water, in its natural state, so full of sedementary matter, as the limited space allowed in manufactories for boilers, it is practically impossible to construct them on this plan. Human ingenuity has, however, devised means of exposing a large heating surface to the water, of providing sufficient space for the water, and means of egress for the steam, combining all with compactness. Those qualities are to be found in the upright steam boilers, which, nevertheless, are, as ordinarily constructed, open to some objection. The steam ascending meets a current of descending water, and the confused action which results is accompanied by unequal temperature in the boiler, strains upon the iron, eddies upon the crown sheet which collect the sediment. Another failing is priming, or the abstraction of water with the steam. What the evils arising from this are, every engineer knows. It entails considerable loss of power, and injures the working parts of the engine considerably. The Hicks Upright Tubular Boiler has been constructed to obviate these and other defects in steam generators of that class. Our illustrations represent an outside view, and a vertical



section of that boiler. In the vertical section, F, is the sheet-iron circulating cylinder or thimble around the tubes, kept in place by being braced to the fire-box sheet; extending from a short distance above the lower tube-sheet to the water-line, dividing the water among the tubes from the water near the outside shell of the boiler. G is the sheet-iron steam-drying cone around the upper part of the tubes, extending from a short distance above the water-line to within about half an inch of the upper tube-sheet, fitting at its lower edge the inside of the shell of the boiler (to which also it is fastened), and the tubes at its upper edge. It thus forms a steam-chamber between the cone and the outside shell of the boiler, into which the steam can only pass by going over the top of the cone. Water is run into the boiler through M to the height W, filling all the spaces between the shell and fire-box and tubes. The fire being then started in the fire-box, heats the lower tube-sheet, tubes, and fire-box sheets. The water directly over the fire among the tubes is, of course, heated first, and, expanding, rises over the top of cylinder F, and flows over into the space between F and the shell of the boiler (the water previously surrounding the cylinder being drawn to fill

its place). A current is thus started up the centre and down the sides, which is rapid in proportion to the intensity of the heat in the tubes and fire-box



This circulation causes a regular action and an equal temperature to the water, and sweeps off the bubbles of steam which naturally cling to the steam-making surface. The steam carried up to the cone G is remarkably pure; the water separating from it at the water-line passes down again with the current. The tubes are prevented getting above the best steam making temperature, as the higher temperature only quickens the circulation, and thus a perfect balance is kept up between the two. The circulation also sweeps the dirt and sediment from the water off the tubes and crown sheet, and deposits them in the space around the fire-box, where the water is the most quiet, effectually preventing all incrustation—a most valuable feature. The steam after being delivered into the upper part of the boiler, is further dried and purified from any water which it may hold by contact with the upper part of the tubes, and then passes into the space between the cone and the shell of the boiler, whence it is taken through the steam-pipe into the engine. Our readers will remember, that when this boiler was exhibited before the Polytechnic branch of the American Institute, a favorable opinion was expressed in regard to its principle. The advantages claimed for this boiler are, that it prevents foaming and incrustation, gives dry steam and equal temperature, and keeps the fire-surface covered with water. It is claimed also that it will not scale no matter how dirty or salt the water may be. For further particulars address J. M. Hicks, 85 Liberty street, New York.

The Bethlehem *Daily Times* says: In a recent conversation with Maj. C. I. Wickersham, superintendent of the Blue Mountain Slate company's quarries, near Slatington, we gathered some facts in relation to experiments lately made in blasting rock and slate in quarries in that vicinity. By the solicitation of Dr. H. O. Wilson, superintendent of the Wilson & Shenton quarry, the company in New York who manufacture the oil, were induced to have the experiments made, which were conducted under the supervision of Capt. R. D. Petut, of the famous Pettit's battery. Experimental blasting was made at the quarries of the Locke Slate company, the Blue Mountain company, the Wilson & Shenton, McDowell's Washington quarry, and at David Wilson's quarries. The blasting was considered entirely successful in regard to rock. The experiments in the use of the oil in "sculping," [the technical term for getting out the blocks from which slates are made,] have not been concluded, but interested parties express themselves confident of its ultimate success in this branch of the business. The oil requires a fifth less drilling than is necessary in the use of powder, and is more economical in many other respects. The use of nitro-glycerine, in slate quarries, if it can be used successfully, of which there does not seem to be much doubt, will be a great saving in the expenses of slate companies. The slate trade is gradually but surely developing itself into great importance among the vast industrial interests of the Lehigh Valley. This results from the avidity with which the men who are engaged in producing slates take hold of and try every invention and improvement which is calculated to increase the facilities for their production, and the general spirit of go-a-headativeness which is so generally evinced in the business.

Mining Land Districts.

The Commissioner of the General Land Office has received Executive orders creating additional land districts, in pursuance of the 9th section of the act of July, 1866, for mining purposes. They are, as follows: An additional district in California, composed of the counties of Sierra Nevada, Placer, Eldorado, Amador, Calaveras, Alpine and Sacramento, with a land office at Sacramento City. Two additional districts of Nevada, the first district to be composed of the county of Lander, with a land office at Austin; second district to be composed of Nye and Esmeralda counties, and the unorganized county of Lincoln, with land office at Belmont. An additional district in Idaho, composed of all that part of the Territory lying north of the Salmon river range of mountains, with a land office at Lewistown. Instructions are being prepared for the government of the officers of these districts, to the end of an early development of the mineral interests, as contemplated by the act.—*Ex.*

WANTED.—A practical Copper Smelter to go to Mexico. One accustomed to use wood preferred. Address J. & S., Office of AMERICAN JOURNAL OF MINING, 37 Park Row, New York. 11:3t

WANTED,—A Situation as Assistant Superintendant of a Blast Furnace, by a Young Man having practical knowledge of the business, and of the Chemical Analysis of Ores, Slags, and other materials and products of the furnace. Address J. P., Box 416, Schenectady, N. Y 9:4t

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WM. B. ROGERS,
11:3m President.

FOR SALE—VALAUBLE PEAT LAND, THREE AND A-HALF MILES FROM NEW YORK CITY.—The advertiser has for sale Fourteen Acres of Good Peat Land, three and a-half miles from New York City, situated near Middle Village, Long Island. A railroad, now in course of construction, has cut off one corner of this property—offering great facilities for transportation.

The Peat has been found to extend to a depth of thirty feet, and of excellent quality. It will be sold at a low figure.

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☞ This Company has a paid in cash capital, amply sufficient to complete the tunnel (of which 200 feet are already accomplished) and develop the mine, together with an additional reserved capital of $150,000 in the stock of the Company. The tunnel being in rapid process of completion, it is now proposed to convert into cash $50,000 of this $150,000 reserved capital, wherewith to erect a twenty-stamp mill, which will be sufficient to reduce twenty tons of ore per day.

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80,000 Tons Scranton Coal,
On WEDNESDAY, May 29, 1867.
NEW YORK, May, 1867.
THE DELAWARE, LACKAWANNA AND WESTERN RAILROAD COMPANY will sell by Messrs. JOHN H. DRAPER & CO., Auctioneers, at the Company's Sales Room, No. 26 Exchange Place, corner of William street, New York, on Wednesday, May 29th, inst., at 12 o'clock noon.
80,000 TONS FRESH MINED COAL,
FROM THE LACKAWANNA REGIONS, of the usual sizes, deliverable at their Depot, Elizabethport, N. J., during the month of June, 1867.
Also, at the same time and place, 5,000 Tons, deliverable at Washington, N. J., for Newark, Paterson, and other places on the line of the Morris Canal.
The rates of transportation from Washington will be made known at the time of sale.
TERMS: Fifty cents per ton, payable in current funds, on the day of sale, and the balance within ten days thereafter, at the Office of the Company.
9:tf JOHN BRISBIN, President.

MESSRS. WILLIAM MULLANY AND GEO. W. ESSER, of the firm of Jno White, Wholesale Coal Dealer No 8 Wall street, New York City, and Mauch Chunk, Pa., retire from said firm to-day by mutual agreement.
The business of the firm will be settled by Jno. White, at No. 8 Wall street, New York City.
JOHN WHITE,
WILLIAM MULLANY,
GEO. W. ESSER.

The undersigned beg leave to announce that they have this day formed a copartnership under the style of JOHN WHITE & CO., for the purpose of conducting a General Wholesale Coal Business, at No. 8 Wall street.
JOHN WHITE,
LOUIS T. SNOW,
Late Treas. McNeal Coal & Iron Co.
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FIRST MORTGAGE BONDS
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This Company is constructing under the patronage of the
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Their line will extend from Sacramento, California, across the Sierra Nevadas to the
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To the vicinity of Salt Lake City. It forms the
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Their road is already completed, equipped and running for ninety-four miles from Sacramento to within twelve miles of the summit of the Sierras, and a large amount of the work of grading, tunnelling, etc., beyond that point has been accomplished.
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The Bonds are issued in denominations of $1,000 with semi-annual Gold Coupons attached, payable in New York, and are offered for the present at 95 per cent. and accrued interest (in currency) from January 1.
Orders may be forwarded to us direct, or through the principal Banks and Bankers in all parts of the country.
Remittances may be made in drafts on New York, or in Legal Tender Notes, National Bank Notes, or other funds current in this city, and the Bonds will be forwarded to any address by Express, free of charge. Inquiries for further particulars by mail or otherwise will receive punctual attention.
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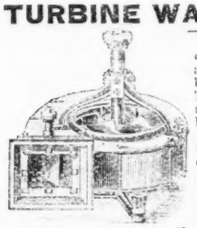

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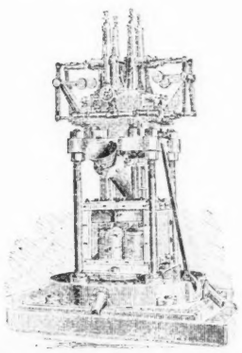

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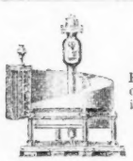

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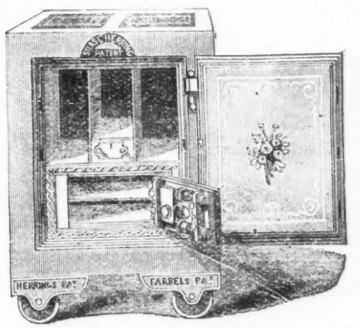

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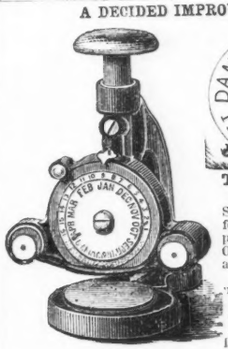

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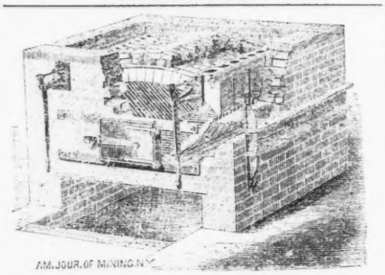

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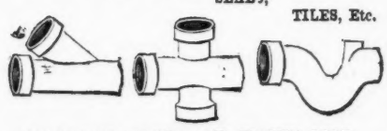

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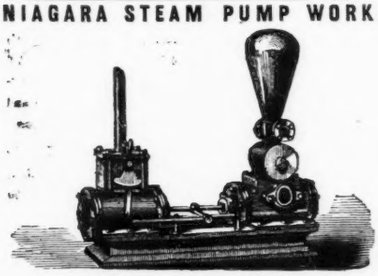

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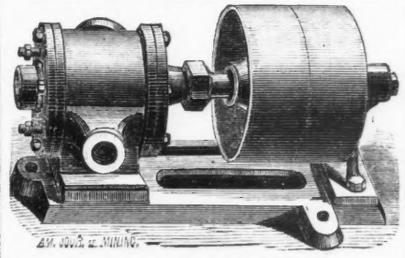

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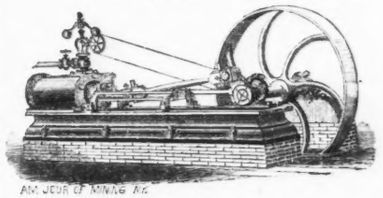

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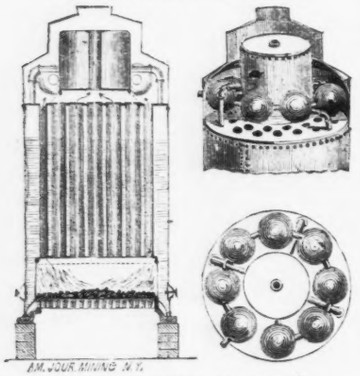

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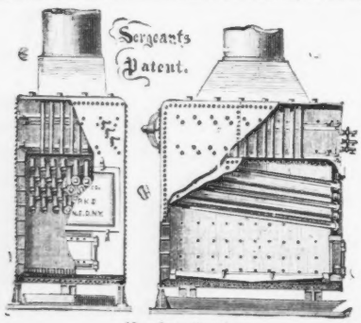

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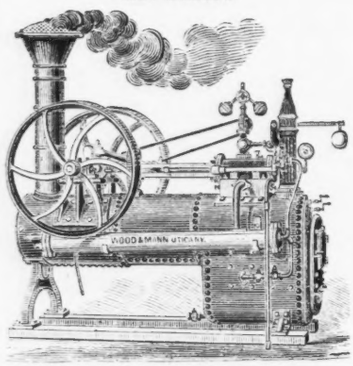

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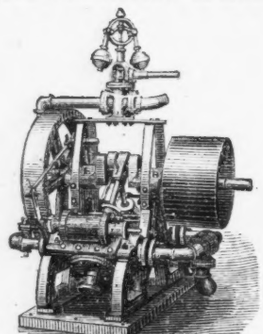

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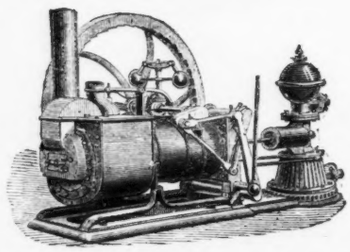

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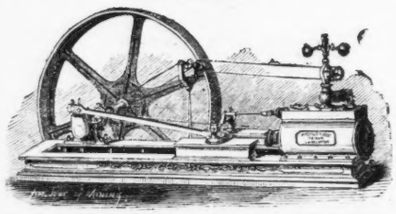

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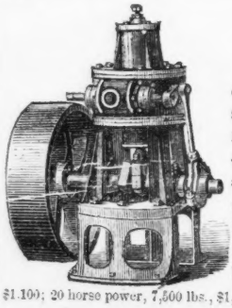

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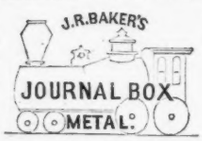

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